APPLICATION FOR GENERAL AIR QUALITY PERMIT IN INDIAN COUNTRY

Fisher Sand & Gravel – New Mexico, Inc.
Grey Mesa Gravel Pit

Request for Coverage under the General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing, and Screening Facilities in Indian Country

Prepared By:

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Project 153201.0111

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1. EXECUTIVE SUMMARY

This request for coverage under the General Air Quality Permit for Minor Source Stone Quarrying, Crushing, and Screening Facilities is being submitted by Fisher Sand & Gravel – New Mexico, Inc. (Fisher). The source will be a portable stone quarrying, crushing, and screening facility at the proposed Grey Mesa Gravel Pit (Grey Mesa). Grey Mesa is currently an abandoned gravel pit located approximately 2.5 miles southwest of the town of Newcomb in San Juan County, New Mexico on Navajo Nation land.

The facility qualifies to apply under this General Permit as all of the criteria below are met:

- You plan to construct a new true or synthetic minor source stone quarrying, crushing, and screening facility OR you plan to modify an existing, minor source stone quarrying, crushing, and screening facility;
  The proposed facility will be a new minor source stone quarrying, crushing, and screening facility.
- You are not planning to construct or modify a major source stone quarrying, crushing, and screening facility;
  The application does not propose to construct or modify a major source facility.
- Your new or modified minor source stone quarrying, crushing, and screening facility is located within Indian country;
  The proposed new facility will be located in Navajo Nation land.
- Your facility processes non-metallic materials (i.e., sand, gravel, rock or stone);
  The proposed facility will process non-metallic minerals.
- Your facility utilizes some combination of primary, secondary, tertiary, or fine crushers or screeners;
  The proposed facility will utilize a combination of crushers and screeners.
- If located in an attainment, unclassifiable or attainment/unclassifiable area for ozone or a marginal or moderate nonattainment area for ozone, after the proposed construction or modification project your facility's fuel usage for all combustion sources is projected to be less than a combined total of 24,200 gallons of diesel fuel per calendar month;
  The facility will be located in an attainment area. The fuel usage for all combustion sources will be limited to less than 24,200 gallons of diesel fuel per calendar month.
- If located in a serious/severe/extreme ozone nonattainment area, after the proposed construction or modification project your facility's fuel usage for all combustion sources is projected to be less than a combined total of 12,000/5,500/1,900 gallons of diesel fuel per calendar month, respectively;
  The proposed facility will not be located in an ozone nonattainment area.
- After the proposed construction or modification project, your facility is projected to process less than 1,100,000 tons of raw material throughput per month based on a 12-month rolling average;
  The proposed facility is projected to process less than 1,100,000 tons of raw material per month based on a 12-month rolling average.
- You are seeking to co-locate your facility with a hot mix asphalt facility and would like to limit your combined emissions to less than 100 tons per year (tpy) for New Source Review (NSR) - regulated pollutants. Your source must comply with Conditions 16. and 19.e. in the General Permit and this option is not available under the General Permit in serious, severe, or extreme ozone nonattainment areas and serious carbon monoxide (CO) nonattainment areas. Sources in these areas would have to seek a site-specific permit to obtain tighter limits to further reduce their potential to emit (PTE);
  The proposed facility will not be co-located with a hot mix asphalt facility.
- You demonstrate that you meet one of the criteria listed in Appendix A with respect to the protection of any and all species that are federally-listed as threatened or endangered under the Endangered Species Act (ESA) or of habitat that is federally-designated as "critical habitat" under the ESA; and
  Criteria D of Appendix A is met. Section 5 of this application demonstrates qualification under this criteria.

- You have completed the screening process in Appendix B to determine if the construction, modification or operation of your new or modified minor source of air pollutants has the potential to cause effects to historic properties (pursuant to the National Historic Preservation Act (NHPA)).

  The screening process in Appendix B has been completed and determined that the proposed source would not have the potential to cause effects on historic properties. Section 6 of this application includes a discussion of this determination.

The proposed stone quarrying, crushing, and screening facility will include the equipment listed in Table 1. The gravel from the pit will enter the primary crusher where rocks will be crushed to approximately 6 inch diameter maximum. The crushed rocks will go through a sorter which will distribute the rock via conveyors to the secondary crushers. Rock from the secondary crusher will be stockpiled for future sale or loaded into trucks and hauled offsite.

Table 1. Proposed Equipment

Unit Number	Description	Equipment Size
1	Oversize Feeder	700 TPH
2	Jaw Crusher	300 TPH
3	Cone Crusher	300 TPH
4	Deck Screen	500 TPH
5	Deck Screen	500 TPH
6	Cone Crusher	700 TPH
7	Cone Crusher	300 TPH
8	Deck Screen	500 TPH
9	Deck Screen	500 TPH
10	Air Separator	75 HP
11 to 19	Conveyors	175 to 700 TPH
20 to 31	Conveyors	175 to 700 TPH
23	Generator	400 HP
33	Generator	650 HP
34	Generator	510 HP
TK-1	Diesel tank	10,000 gal
TK-2	Water tank	10,000 gal
TK-3	Diesel/gasoline tank	2,000 gal

The completed application form is attached in this section.

EPA Form No. 5900-340
EPA ICR No. 1230.27
OMB Control No. 2060-0003
Approval expires 4/30/2017

United States Environmental Protection Agency
General Air Quality Permit for New or Modified Minor Sources of Air Pollution in Indian Country

http://www.epa.gov/air/tribal/tribalnsr.html

Request for Coverage under the General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing, and Screening Facilities in Indian Country

Last Modified: March 23, 2015
Version 1.0

Prior to construction or modification, complete this application and submit it to your reviewing authority. A list of reviewing authorities, their area of coverage, and contact information can be found in Attachment D to the General Air Quality Permit for Minor Source Stone Quarrying, Crushing, and Screening Facilities or visit: http://www.epa.gov/air/tribal/tribalnsr.html.

For questions regarding this application please contact your reviewing authority.

For instructions on completing this application please see the document "Instructions for Requesting Coverage under the General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing, and Screening Facilities in Indian Country."

Section 1: Contact Information

1. Business Name: Fisher Sand & Gravel - New Mexico, Inc.	2. Date: June 2015
3. Site Address(es): See Section 2 for site location details.	4. County(ies): San Juan
5. Name of Operator at Site(s) (if different from owner): N/A	6. Phone of Operator or Contact at Site(s) (if different from owner): N/A
7. Owner: Fisher Sand & Gravel - New Mexico, Inc.	8. Telephone Number of Owner: (866) 460-7927
9. Owner's Mailing Address: Fisher Sand & Gravel - New Mexico, Inc. 30A Frontage Road East Placitas, NM 87043	10.Send all correspondence regarding this application to: Company Name: c/o: Address: Fisher Sand & Gravel - New Mexico, Inc. c/o Brian Gambrel, 30A Frontage Road East, Placitas, NM 87043
11. Authorized contact regarding this permit application: Name: Brian Gambrel Title: Project Manager Phone: (505) 867-2600	Email: bgambrel@fisherind.com FAX: (505) 867-1609

Section 2: Facility Information for Requesting Coverage under the General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing and Screening Facilities

12. Please list all of the site locations for which you want approval to locate your stone quarrying, crushing, and screening facility. Include the site name (if any), street address, city, state, and name of the Indian Reservation. If needed, use additional paper. You may seek approval for additional locations in the future.

Site Name	Street Address	City/Town	Area of Indian Country
Grey Mesa Gravel Pit	Sections 2, 3, and 10, Township 23N, Range 18W	Newcomb	Navajo Nation
	Approximately 2.5 miles southwest of Newcomb in		
	San Juan County, New Mexico		

13. This application is for (check all that apply):

☒ Construction/relocation of a new stone quarrying, crushing, and screening facility in Indian country (please describe the proposed new source).
The proposed source will be a portable stone quarrying, crushing, and screening facility. The application proposes an expansion of an abandoned gravel pit and the upgrade of an existing access road.

☐ Add a new location for your stone quarrying, crushing, and screening facility already covered by the General Permit. (Please describe the proposed new location.)

_____

_____

☐ Modification of an existing stone quarrying, crushing, and screening facility. Please describe the modification below. The definition of "modification" can be found at 40 CFR 49.152(d), and in the "Instructions" document.

_____

_____

☐ A stone quarrying, crushing, and screening operation co-located with a hot mix asphalt operation and seeking to limit combined emissions to less than 100 tpy for NSR-regulated pollutants. You must comply with Conditions 16. and 19.e in the General Permit. This option is not available in serious, severe, or extreme ozone nonattainment areas and serious CO nonattainment areas. (Please describe the proposed source.)

_____

_____

☐ Stationary (fixed) stone quarrying, crushing, and screening facility

☒ Portable stone quarrying, crushing, and screening facility

☐ Relocation of an existing stone quarrying, crushing, and screening facility

14. North American Industry Classification System/Standard Industrial Classification Code and/or description of the facility:
NAICS: 212321 (Construction sand and gravel mining); 212319 (Other crushed and broken stone mining and quarrying)
Gravel from the quarry will enter a primary crusher, be sorted and then conveyed to a secondary crusher.

15. Will your new or modified facility be located in an ozone nonattainment area? Information on the ozone attainment status of the area where your facility is or will be located can be found at: http://www.epa.gov/airquality/greenbook/.

☐ Yes ☒ No

If you answered **'Yes,'** specify the classification of the ozone nonattainment area:

☐ Marginal ☐ Moderate ☐ Serious ☐ Severe ☐ Extreme

16. Will your new or modified facility be located in a particulate matter (PM_{10}/$PM_{2.5}$) nonattainment area? Information on the attainment status of the area where your facility is or will be located can be found at: http://www.epa.gov/airquality/greenbook/.

☐ Yes ☒ No

If you answered **'Yes,'** specify the classification of the PM_{10}/$PM_{2.5}$nonattainment area:

☐ Moderate ☐ Serious

17. Will the PTE of your new facility or the increase in potential emissions from your modified existing facility be equal to or above the applicable minor NSR thresholds listed below for ANY of the listed pollutants, both in tpy? Emissions from your facility may be calculated using the PTE calculator available online at: http://www.epa.gov/air/tribal/tribalnsr.html. Be sure to include all new or modified emission units at your facility.

Pollutant	Attainment Area	Nonattainment Area
CO	10 tpy	5 tpy
Particulate Matter (PM)	10 tpy	5 tpy
Particulate Matter (PM_{10})	5 tpy	1 tpy
Particulate Matter ($PM_{2.5}$)	3 tpy	0.6 tpy
Sulfur Dioxide (SO_2)	10 tpy	5 tpy
Nitrogen Oxides (NO_X)	10 tpy	5 tpy
Volatile Organic Compounds (VOC)	5 tpy	2 tpy

☒ Yes ☐ No

If you answered **'No,'** your source is likely exempt from the minor NSR program. Please contact your reviewing authority to confirm that your facility will not need a permit. If you answered **'Yes,'** continue on to the next question.

18. If located in an attainment, attainment/unclassifiable or unclassifiable area, will the PTE of your new or modified facility be less than 250 tpy for PM, PM_{10}, $PM_{2.5}$, VOC, NO_X, CO, and SO_2 each individually? Be sure to include all existing, new, and modified emission units at the facility.

☒ Yes ☐ No

If you answered **'No,'** your source does not qualify for the General Permit. Please contact your reviewing authority to apply for a site-specific permit. If you answered **'Yes,'** continue on to the next question.

19. If located in a nonattainment area, will the PTE of your facility for the particular nonattainment pollutant be less than the NSR major source thresholds below for ALL pollutants? Be sure to include all existing, new, and modified emission units at the facility.

Pollutant	Nonattainment Classification	NSR Major Source Threshold
Ozone	Marginal	100 tpy of VOC or NO_X
	Moderate	100 tpy of VOC or NO_X
	Serious	50 tpy of VOC or NO_X
	Severe	25 tpy of VOC or NO_X
	Extreme	10 tpy of VOC or NO_X
PM_{10}	Moderate	100 tpy
	Serious	70 tpy
CO	Moderate	100 tpy
	Serious	50 tpy
SO_2, NO_2, $PM_{2.5}$	No nonattainment classification	100 tpy

☐ Yes ☐ No ☒ N/A - Not located in any nonattainment area

If you answered **'No,'** your source does not qualify for the General Permit. Please contact reviewing authority to apply for a site-specific permit. If you answered **'Yes' or 'N/A,'** continue on to the next question.

20. What is the projected monthly throughput of rock, stone, sand, gravel, and aggregate (in tons) to be processed at your new or modified facility?
511,000 tons per month

21. What is the projected monthly usage of diesel fuel (in gallons) for all stationary combustion sources (e.g., boilers) at your new or modified facility?
24,200 gallons per month

Section 3: Technical Information for Requesting Coverage under the General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing and Screening Facilities

Information regarding the emission units at your facility is required by 40 CFR 49.154 and 40.160. Please provide the information below for all equipment at your facility. For each emissions unit, include supporting documentation for the PTE of the unit with your Request for Coverage. In addition, for existing emissions units, include the most recent actual annual emissions. See 40 CFR 49.154(a)(2). (For more information on how to calculate actual emissions, go to: http://www.epa.gov/air/tribal/tribalnsrcalculators.html.) As needed, please include other relevant information with your notification (including any equipment not identified below).

22. **Facility Equipment**
List all equipment at the site that is or will be owned, leased or operated by the applicant, as well as the maximum rated capacity in tons per hour, Btu, or horsepower. If needed to list all equipment, additional pages may be photocopied and added after this one.

Unit ID #	Type Description					Maximum Rated Capacity	Make/ Model	Date of Construction (mm/dd/yyyy)
	Crusher	Screener	Internal Combustion Engine	Other Exhaust Unit	Other (please specify)	Tons per Hour (tph) for Equipment and Btu or Horsepower for engines		
1	☐	☐	☐	☐	Feeder	700 tph	Fisher GSS 48X53	2006
2	✓	☐	☐	☐		300 tph	Pioneer 2854	1996
3	✓	☐	☐	☐		300 tph	Spokane 82DG	1981
4	☐	✓	☐	☐		500 tph	AC 500	1994
5	☐	✓	☐	☐		500 tph	Terex/Cedarapids 3620	1999
6	✓	☐	☐	☐		700 tph	Torgerson HIS	1994
7	✓	☐	☐	☐		300 tph	JCI 1400RA	1999
8	☐	✓	☐	☐		500 tph	JCI 3620	
9	☐	✓	☐	☐		500 tph	Fisher GSS	
10	☐	☐	☐	☐	Air separator	75 hp	Fisher GSS SN04 13'6"	1998

Unit ID #	Type Description					Maximum Rated Capacity	Make/ Model	Date of Construction (mm/dd/yyyy)
11-19	☐	☐	☐	☐	Conveyors	Various; 175-700 TPH	Various	Various
20-31	☐	☐	☐	☐	Conveyors	Various;175-700 TPH	Various	Various
32	☐	☐	✓	☐		400 hp	Caterpillar 3406	1999
33	☐	☐	✓	☐		650 hp	Volvo/IR TAD1361GE/ 2160043289	2001
34	☐	☐	✓	☐		510 hp	Cummins 37173653	1996
	☐	☐	☐	☐				
	☐	☐	☐	☐				

Notes:
In the column labeled Unit ID # please give unique identifiers for all of the equipment at the site. You may use an existing facility numbering system or emissions inventory ID #. This unique identifier will differentiate between the different emission units at the facility.

In subsequent sections of this permit application, please use the same Unit ID #'s already provided for the equipment listed here.

It is recommended—but not required— that you include an identifying letter specific to the equipment type, e.g., 'C' for crusher, followed by an identifying number of your choice.

23. **Crushing** (Please use same ID #'s identified above in this permit application)

Unit ID #	Process Rate			Type				Controls		
	tph	Annual hours of operation	tpy (tph x annual hours)	Primary	Secondary	Tertiary	Fines	Average Moisture Content (%)	Controls Used (Please specify)	Efficiency
2	300	8,760	2,628,000	✓	☐	☐	☐	N/A	N/A	N/A
3	300	8,760	2,628,000	☐	✓	☐	☐	N/A	N/A	N/A
6	700	8,760	6,132,000	☐	✓	☐	☐	N/A	N/A	N/A
7	300	8,760	2,628,000	☐	✓	☐	☐	N/A	N/A	N/A
				☐	☐	☐	☐			
Totals:	1600		14,016,000							

24. **Screening** (Please use same Unit ID #'s identified above in this permit application)

Unit ID #	Process Rate			Type of Screening			Controls		
	tph	Annual hours of operation	tpy (tph x annual hours)	Regular	Fines	Wet Screening*	Average Moisture Content (%)	Controls Used (Please specify)	Efficiency
4	500	8,760	4,380,000	☑	☐	☐	N/A	N/A	N/A
5	500	8,760	4,380,000	☑	☐	☐	N/A	N/A	N/A
8	500	8,760	4,380,000	☑	☐	☐	N/A	N/A	N/A
9	500	8,760	4,380,000	☑	☐	☐	N/A	N/A	N/A
				☐	☐	☐			
Totals:	2,000		17,520,000						

* Wet screening refers to screening processes that are accomplished with water as the carrier of the sand/aggregate or where the aggregate is saturated with water.

25. **Material Handling – Transferring, Loading, Unloading, Conveyors, and Dropping** (Please use same Unit ID #'s identified above in this permit application)

Unit ID #	Description		Maximum Material Transferred (tpy)	Average Moisture Content	Control Technology					
	e.g. truck dump, conveyor drop, truck loading		Per point	%	None	Water Spray	Chemical Additive	Conveyor with ½ cover	Conveyor with ¾ cover	Cover with full cover
Unload	Truck unloading	700 TPH	6,132,000	N/A	☑	☐	☐	☐	☐	☐
11-19	Conveyors	175-700 TPH	6,132,000	N/A	☑	☐	☐	☐	☐	☐
20-31	Conveyors	175-700 TPH	6,132,000	N/A	☑	☐	☐	☐	☐	☐
Load	Truck loading	700 TPH	6,132,000	N/A	☑	☐	☐	☐	☐	☐
					☐	☐	☐	☐	☐	☐
Totals:			24,528,000							

26. **Internal Combustion Engines** (including emergency generators)

Unit ID #	Unit Description	Maximum Rated Capacity (HP)	Types of Fuel(s) Used[1]	Manufactured Date (mm/dd/yyyy)	Model Year
32	Caterpillar 3406 Generator	400 hp	Diesel		
33	Volvo/IR Generator	650 hp	Diesel	2001	
34	Cummins Generator	510 hp	Diesel	1996	

27. **Volatile Liquid Storage Tanks**

This section applies to storage tanks used to store liquid materials. Please provide the following information for each storage tank.

Unit ID#	Type of Liquid	Capacity (gallons)	Vapor pressure of liquid (psi)	Is the tank above or underground?	Date of installation (if existing)
TK1	Diesel	10,000	0.022 psia @ 100F	Above ground	1992
TK2	Water	10,000	N/A	Above ground	1992
TK3	Diesel/Gasoline	2,000	0.022 psia @ 100F	Above ground	1992

Section 4: Information on Completing Screening Processes that Have to Be Satisfied to Request Coverage under the General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing and Screening Facilities

28. **Threatened or Endangered Species**

Have you demonstrated that you meet one of the criteria listed in Appendix A with respect to the protection of any and all species that are federally listed as threatened or endangered under the ESA or of habitat that is federally designated as "critical habitat" under the ESA? If you answer **'No,'** you cannot request coverage under this permit.

☒ Yes ☐ No

If you answered **'Yes,'** then you need to provide the appropriate documentation to the EPA to qualify for coverage under this permit. Please indicate under which criterion in Appendix A you are satisfying this requirement:

☐ A ☐ B ☐ C ☒ D ☐ E

29. **Historic Properties**

Have you completed the screening process in Appendix B to determine if the construction, modification or operation of your new or modified minor source of air pollutants has the potential to cause effects to historic properties (pursuant to the NHPA)? If you answer **'No,'** you cannot request coverage under this permit.

■ Yes ☐ No

If you answered **'Yes,'** then provide the appropriate documentation to the EPA to qualify for coverage under this permit.

Section 5: Additional Information about the General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing and Screening Facilities

This section provides information on the sizes of sources in terms of emissions that are eligible for the General Permit. The emission limitations and standards in this permit are expected to ensure that source-wide emissions are below the rates shown in the following table:

Pollutant of Concern	Attainment, Unclassifiable or Attainment/Unclassifiable Areas	Nonattainment Areas
CO	19 tpy	19 tpy (moderate and serious areas)
PM_{10}	63 tpy	63 tpy (moderate areas and serious areas)
$PM_{2.5}$	63 tpy	63 tpy
NO_X	88 tpy	88 tpy (marginal and moderate ozone areas)
		45 tpy (serious ozone areas)
		22.5 tpy (severe ozone areas)
		9 tpy (extreme ozone areas)
VOC	7 tpy	7 tpy (ozone areas)

For a stone quarrying, crushing and screening operation co-located with a hot mix asphalt operation the emission limitations and standards in Conditions 16. and 19.e of the General Permit are expected to ensure the source-wide emissions are below the rates shown in the following table:

Pollutant of Concern	Attainment, Unclassifiable or Attainment/Unclassifiable Areas	Nonattainment Areas
CO	78 tpy	78 tpy (moderate areas)
		Not applicable (serious areas)

Pollutant of Concern	Attainment, Unclassifiable or Attainment/Unclassifiable Areas	Nonattainment Areas
PM	86 tpy	Not applicable
PM_{10}	63 tpy	63 tpy (moderate areas)
		63 tpy (serious areas)
$PM_{2.5}$	30 tpy	30 tpy
SO_2	18 tpy	18 tpy
NO_X	90 tpy	Not applicable (serious and above ozone areas)
		90 tpy (marginal and moderate ozone areas)
VOC	27 tpy	Not applicable (serious and above ozone areas)
		27 tpy (marginal and moderate ozone areas)

You should contact your reviewing authority if you intend to rely on the emission limitations and standards in this General Permit to prevent having to obtain a Title V permit.

Applicant's Statement (to be signed by the applicant)

I certify that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Name: Brian Gambrel (Signature) Name: Brian Gambrel (Print or Type) Date: 5-3-2015

Title: Project Manager

The emission calculations for the facility are attached in this section. Emissions were calculated using the PTE calculator available online at http://www.epa.gov/air/tribal/tribalnsr.html. The potential to emit calculator shows that the total potential to emit of the facility falls under the threshold emission rates for attainment areas listed in Section 5 of the application form.

4.1. CRUSHING, SCREENING & CONVEYING

As a conservative measure, emissions from crushing, screening, and conveying were performed based on 8,760 hours of operation. The emission calculation for controlled dry sand and gravel conveying contained a link to the incorrect emission factor. The calculation used the emission factor for uncontrolled screening (tertiary crushing). The calculation was updated to use the conveyor transfer point (controlled) emission factor, consistent with the uncontrolled dry sand and gravel conveying emission rate calculation.

4.2. ENGINES

Emissions and fuel usage rates are calculated based on 3,636 hours of operation annually, based on default fuel usage numbers. Fuel usage rates are calculated at 24,146 gal/month. As a conservative measure and to account for potential variability in actual, site-realized fuel usage rates, the maximum fuel usage rate of 24,200 gal/month is being requested in this application. As such, Fisher requests that the permit limit be based on fuel usage rather than hours of operation.

Potential To Emit Calculator for Stone Quarrying, Crushing, and Screening Plants

3/23/2015

This workbook is designed to calculate the potential to emit of a sand, gravel, rock crushing, and screening facility without control devices.

Directions - Enter the facility's information below in the yellow highlighted cells.
For the rock processing operations, input the number of machines in each category that are used in your operations.
For the conveying operations, enter the number of drop points associated with each crushing/screening operation.
For the truck loading and transport offsite, enter the number 1.
For the engines, input the total horsepower rating of all the stationary engines on site.

The potential to emit for the facility will be displayed under the "Output" tab. The criteria pollutant emission rate is calculated depending on the equipment used and the maximum rating of any stationary engines. The effect of any control devices is not considered.

Facility Profile

Rock Processing Equipment	Number of Operations	Maximum Capacity (tons/hr)*	Number of Conveyor Drop Points	Description
Truck Unloading/Grizzly Feeder	1	700		Fragmented rock delivered to site and dumped into grizzly or crusher feeder
Primary Crusher (Output is 3 - 12 inches) and Screening	1	300	1	Rock that passes through the primary crusher. This rock is 3 to 12 inches in diameter after this step. Rock is screened, conveyed to a pile, and shipped offsite or conveyed to another processing step.
Secondary Crusher (Output is 1 - 3 inches) and Screening	1	1,300	5	Rock that passes through the secondary crusher. This rock is 1 to 3 inches in diameter after this step. Rock is screened, conveyed to a pile, and shipped offsite or conveyed to another processing step.
Tertiary Crusher (Output is 3/16 - 1 inches) and Screening	0	0	0	Rock that passes through the tertiary crusher. This rock is 3/16 to 1 inches in diameter after this step. Rock is screened, conveyed to a pile, and shipped offsite or conveyed to another processing step.
Fines Crusher (output is less than 3/16 inches) and Screening	0	0	0	Rock that passes through the fines crusher. This rock is less than 3/16 inches in diameter after this step. Rock is screened, conveyed to a pile, and shipped offsite.
Dry Sand and Gravel Screening**	1	600	21	Dry sand and gravel that passes through the screener. Dry sand and gravel is excavated, screened, classified for size, conveyed to a pile, and shipped offsite.
Truck Loading and Transport Offsite	1	700		Rock product that is shipped offsite.

* If the maximum capacity of a piece of equipment is bottlenecked (reduced) by another piece of equipment operating in a 'train', enter the bottlenecked capacity.

** If your sand and gravel screening operation processes saturated material, and uses wet processing methods, enter zero (0) for the inputs in this row.

Power Generation Equipment	Generator/Engine Size (Hp) (total)	Sulfur Content of Diesel Fuel (%)	Description
Stationary Diesel Electrical Generators w/ Rating Less Than or Equal to than 600 Hp	910	0.50%	A stationary engine is an engine that is used in a fixed location, or a nonroad (portable) engine that remains in one location for at least a full year.
Stationary Diesel Electrical Generators w/ Rating Greater than 600 Hp	650	0.50%	

Storage Piles		Description
Rock Product in Storage Piles (tons)	50,000	Average Amount of Crushed Rock Product Stored in Storage Piles During the Year (tons). Default value is one week's production.
Moisture Content of Storage Piles (%)	2.0%	Moisture content of the storage piles. If operations are controlled with water sprays, include this in your estimate. Default value for uncontrolled operations is 0.7%. Default value for controlled operations is 2%.
Mean Wind Speed (mph)	15.00	Average wind speed at the site.

Potential To Emit Calculator for Stone Quarrying, Crushing, and Screening Plants

3/23/2015

Facility Potential to Emit (PTE) Summary

FOR DETERMINING IF YOU NEED A PERMIT (does not include controls):

	Pollutant						
Process	PM	PM_{10}	$PM_{2.5}$	SO_2	NO_X	CO	VOC
Sand, Gravel, Rock Crushing, Screening, Conveying	1140.21	318.29	0.00	-	-	-	-
Storage Piles	0.25	0.12	0.02	-	-	-	-
Engine/Generator	4.47	4.4668	4.47	8.17	79.65	17.55	4.92
Total Potential to Emit (tons/year)	**1144.92**	**322.87**	**4.48**	**8.17**	**79.65**	**17.55**	**4.92**

FOR DETERMINING PTE IF USING GENERAL PERMIT (includes controls in General Permit):

Process	PM	PM_{10}	$PM_{2.5}$	SO_2	NO_X	CO	VOC
Sand, Gravel, Rock Crushing, Screening, Conveying	25.94	14.11	0.39				
Storage Piles	0.25	0.12	0.02	-	-	-	-
Engine/Generator	4.47	4.47	4.47	8.17	79.65	17.55	4.92
Total Potential to Emit (tons/year)	**30.65**	**18.69**	**4.87**	**8.17**	**79.65**	**17.55**	**4.92**
Threshold emission rates		**63**	**63**		**88**	**19**	**7**

Maximum Throughputs, Based on Equipment Capacity	
Operation Description	tons/year
Truck Unloading - Fragmented Stone	6,132,000
Primary Crushing and Screening	2,628,000
Secondary Crushing and Screening	11,388,000
Tertiary Crushing and Screening	0
Fines Crushing and Screening	0
Dry Sand and Gravel Screening	5,256,000
Conveyor Transfer Points (total)	169,944,000
Truck Loading - Conveyor, crushed stone	6,132,000
Threshold raw material processing for General Permit:	13,200,000

Maximum Fuel Usage, Based on Engine Size		
Operation Description	gal/year	gal/month
Diesel Engine (<= 600 hp)	169,024	14,085
Diesel Engine (> 600 hp)	120,731	10,061
Threshold fuel usage for General Permit:		24,200

Potential To Emit Calculator for Stone Quarrying, Crushing, and Screening Plants

3/23/2015

Emissions from Sand, Gravel, Rock Crushing, and Screening Operations

1. Emission Factors for PM, PM10 , and PM2.5

		Emission Factors (lb/ton)		
Type of Operation	**SCC**	**PM [c]**	**PM10**	**PM2.5 [c]**
Primary Crushing [a]	3-05-020-01	1.4E-03	6.0E-04	
Primary Crushing (controlled) [a]	3-05-020-01	3.0E-04	1.4E-04	
Secondary Crushing [a]	3-05-020-02	2.7E-03	1.2E-03	
Secondary Crushing (controlled) [a]	3-05-020-02	6.0E-04	2.7E-04	
Tertiary Crushing	3-05-030-03	5.4E-03	2.4E-03	
Tertiary Crushing (controlled)	3-05-020-03	1.2E-03	5.4E-04	1.0E-04
Fines Crushing	3-05-020-05	3.9E-02	1.5E-02	
Fines Crushing (controlled)	3-05-020-05	3.0E-03	1.2E-03	7.0E-05
Screening of Primary Crusher Output [b]		6.3E-03	2.2E-03	
Screening of Primary Crusher (controlled) [b]		5.5E-04	1.9E-04	
Screening of Secondary Crusher Output [b]		1.3E-02	4.4E-03	
Screening of Secondary Crusher Output (controlled) [b]		1.1E-03	3.7E-04	
Screening (Tertiary Crushing)	3-05-020-02-03	2.5E-02	8.7E-03	
Screening (Tertiary Crushing) (controlled)	3-05-020-02-03	2.2E-03	7.4E-04	5.0E-05
Fines Screening	3-05-020-21	3.0E-01	7.2E-02	
Fines Screening (controlled)	3-05-020-21	3.6E-03	2.2E-03	
Conveyor Transfer Point	3-05-020-06	3.0E-03	1.1E-03	
Conveyor Transfer Point (controlled)	3-05-020-06	1.4E-04	4.6E-05	1.3E-05
Truck Unloading - Fragmented Stone	3-05-020-31	1.6E-05	1.6E-05	
Truck Loading - Conveyor, crushed stone	3-05-020-32	1.0E-04	1.0E-04	

Emission factors are from AP 42, Chapter 11.19.2, Tables 11.19.2-2 and 11.19.2-4 (1/95), except as noted.

[a] AP 42 emission factors for primary crushing and secondary crushing are not available. Emission factors are estimated based on the assumption that emissions are proportional to the relative surface area of the product emerging from the crusher. Secondary crushing emissions are conservatively estimated at 50% of tertiary crushing emissions, and primary crushing emissions are conservatively estimated at 50% of secondary crushing emissions.

[b] AP 42 emission factors for screening of rock output from primary crushing are not available. Emission factors are estimated based on the assumption that emissions are proportional to the relative surface area of the product emerging from the crusher. Secondary screening emissions are conservatively estimated at 50% of tertiary crushing emissions, and primary screening emissions are conservatively estimated at 50% of secondary screening emissions.

[c] Where there is no data for an emission factor, a blank cell is shown in the emission factor table.

2. Potential to Emit from Rock Crushing and Screening Operations

Purple values are from the inputs page
Blue values are results

Type of Operation	Maximum Throughput (tons/yr)	Emissions (tons/yr) (uncontrolled)			Emissions (tons/yr) (controlled)		
		PM	PM10	PM2.5	PM	PM10	PM2.5
Truck Unloading - Fragmented Stone	6,132,000	0.0491	0.0491	0.0000	0.0491	4.9E-02	0.0E+00
Primary Crushing	2,628,000	1.7739	0.7884	0.0000	0.3942	1.8E-01	0.0E+00
Screening of Primary Crusher Output	2,628,000	8.2125	2.8580	0.0000	0.7227	2.4E-01	0.0E+00
Conveyor Transfer Point	2,628,000	3.9420	1.4454	0.0000	0.1840	6.0E-02	1.7E-02
Secondary Crushing	11,388,000	15.3738	6.8328	0.0000	3.4164	1.5E+00	0.0E+00
Screening of Secondary Crusher Output	11,388,000	71.1750	24.7689	0.0000	6.2634	2.1E+00	0.0E+00
Conveyor Transfer Point	56,940,000	85.4100	31.3170	0.0000	3.9858	1.3E+00	3.7E-01
Tertiary Crushing	0	0.0000	0.0000	0.0000	0.0000	0.0E+00	0.0E+00
Screening of Tertiary Crusher Output	0	0.0000	0.0000	0.0000	0.0000	0.0E+00	0.0E+00
Conveyor Transfer Point	0	0.0000	0.0000	0.0000	0.0000	0.0E+00	0.0E+00
Fines Crushing	0	0.0000	0.0000	0.0000	0.0000	0.0E+00	0.0E+00
Fines Screening	0	0.0000	0.0000	0.0000	0.0000	0.0E+00	0.0E+00
Conveyor Transfer Point	0	0.0000	0.0000	0.0000	0.0000	0.0E+00	0.0E+00
Dry Sand and Gravel Screening	5,256,000	788.4000	189.2160	0.0000	2.8908	5.8E+00	0.0E+00
Dry Sand and Gravel Conveying	110,376,000	165.5640	60.7068	0.0000	7.7263	2.5E+00	0.0E+00
Truck Loading - Conveyor, crushed stone	6,132,000	0.3066	0.3066	0.0000	0.3066	3.1E-01	0.0E+00
	Total	**1140.207**	**318.289**	**0.000**	25.9392	1.4E+01	3.9E-01

Methodology
Maximum Throughput (tons/yr) = Number of Operations x Maximum Capacity (tons/hr) x Total Annual Hours of Operation (hr/yr)
Emissions (tons/yr) = Maximum Throughput (tons/yr) x Emission factor (lb/ton) x 1 ton/2,000 lbs

Total Annual Hours of Operation (hr/yr)	**8,760**

Potential To Emit Calculator for Stone Quarrying, Crushing, and Screening Plants

3/23/2015

Emissions from Storage Piles

50,000	Average Annual Product in Piles (ton/yr)
2	Agg. Moisture (%)
15.00	Mean Wind Speed (MPH)

Purple values are pulled from the inputs worksheet
Blue values are results

According to AP42, Chapter 13.2.4 - Aggregate Handling and Storage Piles (updated 11/06), the particulate emission factors for storage piles can be estimated from the following equation:

$$Ef = \frac{k \times 0.0032 \times (U/5)^{1.3}}{(M/2)^{1.4}}$$

where:

Ef =	Emission Factor (lbs/ton)	
k =	Particle size multipliers =	0.74 for PM, 0.35 for PM_{10}, and 0.053 for $PM_{2.5}$
U =	Mean wind speed (MPH) =	15 MPH (provided by the facility)
M =	Moisture content (%) =	2 % (provided by the facility)

Pollutant	Emission Factor (lb/ton)	Potential to Emit (tons/yr)
PM	0.00988	0.247
PM_{10}	0.00467	0.117
$PM_{2.5}$	0.00071	0.018

Methodology

Potential to Emit (ton/yr) = Max. Annual Production (ton/yr) x 1/52 x EF (lb/ton) x 1 ton/2000 lb

Assume that storage piles contain one week's production, on average.

Potential To Emit Calculator for Stone Quarrying, Crushing, and Screening Plants

3/23/2015

Emissions from Generator/Engine(s)

Diesel Engine <= 600 Hp: **910** total hp
Diesel Engine > 600 Hp: **650** total hp

Total Engine PTE (ton/yr) Based on AP-42 Emission Factors

PM	PM_{10}	$PM_{2.5}$	SO_2	NO_X	CO	VOC
4.47	**4.47**	**4.47**	**8.17**	**79.65**	**17.55**	**4.92**

Engine Type: **Diesel Engine (<= 600 hp)** Used: **Yes**

Emission Calculations (AP-42)

Pollutant						
PM^2	PM_{10}	$PM_{2.5}^2$	SO_2	NO_X	CO	VOC^3
Emission Factor[1] (lbs/hp-hr)	0.0022	0.0022	0.0022	0.00205	0.031	0.00668	0.00247
Potential to Emit (ton/yr)	**3.64**	**3.64**	**3.64**	**3.39**	**51.29**	**11.05**	**4.09**

Note:
1. Emission factors are from Chapter 3.3, Table 3.3-1 (updated 10/96).
2. Assume PM and $PM_{2.5}$ emissions are equal to PM_{10} emissions.
3. Assume TOC (total organic compounds) emissions equal to VOC emissions.

Methodology
Potential to Emit (ton/yr) = total horsepower (hp) x Emission Factor (lb/hp-hr) x Hours of Operation (hr/yr) x 1 ton/2000 lb

Engine Type: **Diesel Engine (> 600 hp)** Used: **Yes** Sulfur Content: **0.50** %

Emission Calculations (AP-42)

Pollutant						
PM	PM_{10}	$PM_{2.5}^2$	SO_2	NO_X	CO	VOC^3
Emission Factor[1] (lbs/hp-hr)	0.0007	0.0007	0.0007	0.004045	0.024	0.0055	0.000705
Potential to Emit (ton/yr)	**0.83**	**0.83**	**0.83**	**4.78**	**28.36**	**6.50**	**0.83**

Note:
1. Emission factors are from Chapter 3.4, Tables 3.4-1 and 3.4-2 for Large Stationary Diesel and Dual Fuel Engines (updated 10/96).
2. Assume $PM_{2.5}$ emissions are equal to PM_{10} emissions.
3. Assume TOC (total organic compounds) emissions equal to VOC emissions.

Methodology
Potential to Emit (ton/yr) = total horsepower (hp) x Emission Factor (lb/hp-hr) x Hours of Operation (hr/yr) x 1 ton/2000 lb

Fuel Usage (gal/yr)	**289,755**
Fuel Usage (gal/month)	**24,146**

Methodology:
Fuel Usage (gal/yr) = Total Engine Horsepower (hp) x Hours of Operation (hr/month) x 12 months/year x 7,000 Btu/hp-hr x 1 lb fuel/19,300 Btu x 1 gal/7.1 lb

Fuel Usage (gal/month) = Fuel Usage (gal/year) / 12 months/year

Total Monthly Hours of Operation (hr/mo)	**303**
Total Annual Hours of Operation (hr/yr)	**3,636**

5. THREATENED OR ENDANGERED SPECIES REQUIREMENTS

An environmental assessment was performed in 2009 and approved in March of 2010 by the Division of Environmental, Cultural, and Safety Management, Navajo Regional Office. It was determined that the proposed actions would not have a significant impact on the natural and human environment. An environmental impact statement for the proposed project was deemed not required.

Due to a new species listing, the biological evaluation was updated in May of 2015. The conclusion of the evaluation is consistent with the initial assessment: due to lack of available suitable habitat, the proposed actions should have no negative impacts on any listed or special status species.

The initial environmental assessment in combination with the updated evaluation meet the requirements of Criterion D. A copy of the assessments are attached in this section.

2009 Environmental Assessment

United States Department of the Interior

Bureau of Indian Affairs
Navajo Region
P. O. Box 1060
Gallup, New Mexico 87305

MC 620: Division of Environmental, Cultural & Safety Management

TAKE PRIDE IN AMERICA

MEMORANDUM

MAR 18 2010

To: Regional Realty Officer
Attention: Ms. Mary Lujan

From: NEPA Coordinator */s/ Harrilene J. Yazzie*

Through: Regional Environmental Scientist */s/ George Padilla*

Subject: FONSI-Recon Oil Co., Inc Grey Mesa Gravel Pit and Access Road **EA-09-236**

The Environmental Assessment (EA), EA-09-236, for Recon Oil Corporation, Inc, proposed Grey Mesa Gravel Pit and Access Road on 88.58 acres of Navajo Tribal Trust land located roughly 0.5-3 miles southwest of Newcomb, San Juan County, New Mexico, has been reviewed in the Division of Environmental, Cultural and Safety Management, Navajo Regional Office. A Finding of No Significant Impact (FONSI) has been determined for the proposed action. It will not have a significant impact on the quality of the natural and human environment. An environmental impact statement for the proposed project is not required.

If you have questions, you may contact Ms. Harrilene J. Yazzie, Regional NEPA Coordinator, at (505) 863-8287.

Attachment

cc: **Mr. Brian Wood, Permits West, Inc. 37 Verano Loop, Santa Fe, NM 87508**

FINDING OF NO SIGNIFICANT IMPACT
ENVIRONMENTAL ASSESSMENT DOCUMENT, EA-09-236
GREY MESA GRAVEL PIT AND ACCESS ROAD

RECON OIL CORPORATION, INC

Location: Newcomb and Sheep Springs Quadrangles, USGS 7.5 Minute Series Maps
Sections 2, 3 & 10, T23N, R18W, NMPM
Sections 35 & 36, T24N, R18W, NMPM
Southwest of Newcomb, San Juan County, New Mexico

The proposed action is approval of a right-of-way (ROW) grant, by the Bureau of Indian Affairs, for gravel pit expansion and access road. The expansion for the gravel pit will be 83.73 acres and upgrade of access road will be 20-feet by 2 miles (4.85 acres). No more than 20% (≈16.6 acres) of the pit will be excavated at any one time. Upgrading will consist of rocking low water crossings and installing a cattle guard in the U.S. 491 fence at Mile Post ≈55.99. There will be no drilling or blasting. The project will affect 88.58 acres of Navajo Tribal Trust land located roughly 0.5-3 miles southwest of Newcomb, San Juan County, New Mexico. The project is sponsored by Recon Oil Corporation, Inc., 920 E. Highway 66, Gallup, New Mexico 87301.

The project environmental assessment (EA) was reviewed by the Division of Environmental, Cultural and Safety Management, Navajo Regional Office. Based on the environmental assessment and the mitigation measures specified in the document, it is determined that the proposed action will not have a significant impact on the natural and human environment. Therefore, in accordance with the National Environmental Policy Act, Section 102 (2) (C), an environmental impact statement will not be required.

The following references, incorporated in the environmental assessment, serve as the bases for this decision:

1. Agency and public involvement was solicited. Environmental issues relative to right-of-way approval for the proposed project were identified. Alternative courses of action and mitigation measures were developed in response to environmental concerns and issues.

2. The EA disclosed the environmental consequences of the proposed and "no action" alternatives.

3. In compliance with the Endangered Species Act, informal consultation was held with the Navajo Nation Department of Fish and Wildlife (NNDFW), Natural Heritage Program (NHP). Although the NNDFW has no record of species of concern occurring on or near the project site at this time, it provided a list of species of concern having the ***potential*** to occur on the *Newcomb, NM,* USGS 7.5-Minute Quadrangle containing the project boundaries (June 29, 2009). In accordance with the NNDFW Biological Resource Land Clearance Policies and Procedures (BRLCPP), the proposed project is located within a low sensitivity wildlife resources zone and therefore the NNDFW issued Biological Compliance Form (BRCF), NNDF & WL Review No. 09/21/09Q indicating **Compliance** with Tribal and Federal laws protecting biological resource (EA-Appendix 7-BRCF).

4. Potential impacts to flood plains and wetlands by the proposed project have been evaluated in accordance with Executive Orders 11988 and 11990 respectively. According to the Federal Emergency Management Agency Flood Insurance Rate Map the proposed action is not located in a floodplain. Therefore, there will be no involvement with any 100-year floodplain as a result of the construction of the proposed action (EA, Part 3.0-Table A).

5. Water Resources- surface flows are associated with small ephemeral drainage from snow melt and summer thunderstorms. Local drainage in the area is northeast off of Grey Mesa into an unnamed ephemeral wash that drains into Captain Tom Wash then on to the Chaco River. There are no springs on the sides of the mesa which could indicate shallow depth to groundwater. Potential impacts from the proposed action include: 1) increased sediment loading to the adjacent surface drainages through runoff of disturbed soils; and, 2) produced water and/or drilling fluids getting into surface or ground hydrology. Mitigation measures shall include: 1) protecting water zones and fresh water; 2) cleaning spilled contaminants quickly; and 3) reclaiming disturbed areas (EA, Parts 3.3, 3.3.1 & 3.3.2).

6. In compliance with the National Historic Preservation Act of 1966, as amended, Section 106 and 36 CFR 800.9 (b), a cultural resources inventory was conducted on the project area by Complete Archeology Service Associates (CASA). The Navajo Nation Historic Preservation Department (NNHPD) issued Cultural Resources Compliance Form (CRCF), NNHPD No. HPD-09-572 indicating, ***No historic properties will be affected if the conditions are followed that are cited within the CRCF (Appendix-5-CRCF). The operator shall comply with the effects and conditions of compliance cited in the CRCF (Appendix-5-CRCF).***

In the event of a discovery [discovery means any previously unidentified or incorrectly identified cultural resources including, but not limited to, archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices] all operations in the immediate vicinity of the discovery must cease, and the Navajo Nation Historic Preservation Department must be notified.

7. RCRA, Subtitles C and D, Hazardous and Non-Hazardous Solid Waste- generation of hazardous waste is not expected. If hazardous waste is inadvertently generated, the proper authorities shall be consulted regarding disposal. Solid waste materials will be generated as a result of construction, drilling and operation of the project (EA, Part 3.5.). All trash shall be placed in a portable trash cage and hauled to an approved landfill. Trash shall not be buried or burned. Chemical toilets shall be used for human waste. The waste shall be disposed at approved dump stations (EA, Part 3.5.2).

8. Air Resources- there will be a short-term increase in dust during construction of the proposed project and there will be a local increase in combustive emissions from operating vehicles and earth moving equipment. Water shall be applied for dust control and vehicular traffic shall be limited to reduce combustive emissions and dust. Crushing and separating operations at the gravel pit will be performed by a contractor. The contractor shall be responsible for the obtaining the required permits and shall practice best management practices (EA, Parts 3.2.1 & 3.2.2).

9. Noise levels- the proposed action will be located in a relatively isolated location and is not within 400 feet of a BLM designated Noise Sensitive Area (NSA), nor is the pit located within 400 feet of any dwelling, residence, or building. There is no house located within a quarter mile of the proposed action (EA, Part 3.0-Table b).

10. Noxious Weeds- the Biological Assessment of the proposed action indicated the presences of halogeton, and invasive non-native species; however, no other invasive or non-native species were found in the project area. Noxious weeds may become established in disturbed areas within the proposed action. However, the operator shall make every effort to ensure that noxious weeds do not spread over disturbed areas (EA, Part 3.8.1, 3.8.2). If noxious weeds become established in the project area, the operator shall contact the Navajo Nation Department of Agriculture regarding management and control of noxious weeds. The NNEPA, Pesticide Enforcement and Development Program may be contacted regarding pesticide/herbicide applicators.

11. Cumulative and secondary effects on soil, water, air, noise, vegetation, cultural resources, and wildlife resources (species and habitat) were considered, and the proposed mitigation measures were found to be acceptable.

12. In accordance with Executive Order 12898 on Environmental Justice, impacts to minority and low-income populations and communities have been considered by the Regional NEPA Coordinator, as have impacts to Indian Trust Resources.

The proposed action would allow the development and production of mineral resources to meet national, regional and local energy needs.

MAR 18 2009

Regional NEPA Coordinator

Date

ENVIRONMENTAL ASSESSMENT (EA) FOR
RECON OIL CO., INC.
PLAN OF DEVELOPMENT
GREY MESA GRAVEL PIT AND ACCESS ROAD
ON NAVAJO TRIBAL SURFACE
TOWNSHIP 23N, R18W, SECTIONS 2, 3, and 10 (PIT)
And
TOWNSHIP 24N, R18W, Section 35 and 36 (ACCESS)

NAVAJO NATION SAND AND GRAVEL LEASE NO.:_____

July 19, 2009

1. Introduction

Oil Company (Recon) is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing 'abandoned' gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. It is roughly ½ - three miles southwest of the town of Newcomb (Appendix 1).

1.1 Purpose and Need

The initial purpose of the Proposed Action is to mine gravel for sale to construction companies widening US 491 to four lanes. Thereafter the gravel will be for private and/or public sale for future projects, depending on gravel market conditions.

1.2 Conformance with Applicable Land Use Plan and Other Environmental Assessments

Pursuant to 40 Code of Federal Regulations (CFR) 1508.28 and 1502.21, this site-specific environmental assessment (EA) tiers to and incorporates by reference the information and analysis contained in the Farmington Proposed Resource Management Plan/Final Environmental Impact Statement [(PRMP/FEIS) BLM 2003a], which was approved as the Final Resource Management Plan for the Farmington Field Office (FFO) of the BLM by the Record of Decision (ROD) signed September 29, 2003 (BLM 2003b). This EA addresses the resources and impacts on a site-specific basis as required by the National Environmental Policy Act (NEPA) of 1969, as amended (Public Law 91-90, 42 USC 4321 et seq.). The proposed project would not be in conflict with any local, county, or state plans.

1.3 Federal, State or Local Permits, Licenses or Other Consultation Requirements

A Navajo Nation Sand and Gravel Lease will be obtained by Recon for the right to extract sand and gravel from the designated location, and for the right-of-way access to the gravel pit. The proposed surface use plan is attached as Appendix 2. Field clearance request for 88.58 acres (83.73 for pit + 4.85 for road) was received by Project Review Office on June 19, 2009.

The Proposed Action will excavate an area larger than 1 acre (~16.6 acres at a time) therefore Recon would be subject to Nation Pollutant Discharge Elimination System (NPDES) permit requirements. Recon will prepare a Storm Water Pollution Prevention Plan and obtain a permit from the Environmental Protection Agency NPDES program.

Compliance with Section 106 responsibilities of the National Historic Preservation Act are adhered to by following the BLM – New Mexico SHPO protocol agreement, which is authorized by the National Programmatic Agreement between the *BLM*, the *Advisory Council on Historic Preservation*, and the *National Conference of State Historic Preservation Officers,* and other applicable BLM handbooks.

The Navajo Nation Department of Fish & Wildlife (NFWD)-Natural Heritage Program has been consulted within the last two years with respect to species of concern that are known to occur or that have the potential to occur within the area of the Proposed Action (Appendix 3). Species of concern listed by the NFWD will be evaluated in Section 3.0 of this document and in the Biological Assessment attached as Appendix 4.

In Addition, crushing and separating operations at the gravel pit will be performed by a contractor. The contractor will be responsible for obtaining the required permits from the Navajo Nation Environmental Protection Agency Air Quality Control Program.

Additionally, the Operator is required to comply with all applicable Federal, State and Local laws and regulations.

2. Alternatives Including the Proposed Action

2.1 Alternative A - No Action

The BLM NEPA Handbook (H-1790-1) states that for Environmental Assessments (EAs) on externally initiated proposed actions, the No Action Alternative generally means that the proposed activity will not take place. This option is provided in 43 CFR 3162.3-2 (h) (2). This alternative would deny the approval of the Sand and Gravel Lease necessary to construct the Proposed Action on Navajo Tribal surface, and the current land and resource uses would continue to occur in the proposed project area. No mitigation measures would be required.

The No Action Alternative is presented for baseline analysis of resource impacts.

2.2 Alternative B Proposed Action

The Proposed Action involves upgrading of an existing access road and expansion of an abandoned depleted pit. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Section 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. A project location map and plat of the proposed pit expansion is attached as Appendix 1.

2.2.1. Gravel Pit

The proposed gravel pit expansion is in the NE/4 of Section 10, the SE/4 of Section 3, and the NE/4 of Section 2 (T. 23 N., R. 18 W.). The northern boundary is along an existing two-track road, with the existing abandoned gravel pit on the north side of the road at the east end. The eastern boundary is along an existing two-track road. The southern boundary is along the south edge of Grey Mesa. The western boundary is across undisturbed land. See Section 6 of Appendix 2 for proposed construction, operation and reclamation procedures for the Proposed Action.

2.2.2. Access Road

The access road is in the SW/4, NW/4, and NE/4 of Section 2 (T. 23 N., R. 18 W.) and the SE/4 of Section 35 and SW/4 and NE/4 of Section 36 (T. 24 N., R. 18 W.). It begins on the west side of US Highway 491 in the NE/4 of Section 36 (T. 24 N., R. 18 W.) and heads west around the north side of a residential area. It continues southwest and then south to end at the proposed gravel pit expansion in the SW/4 of Section 2 (T. 23 N., R. 18 W.).

Upgrading will consist of rocking low water crossings and installing a cattle guard in the US 491 fence at Mile Post ≈55.99. Low water crossing work will consist of excavating a swath below grade and piling the excavated material atop the arroyo bank. The swath will then be packed with pit run rock. The road dimensions will be 20 feet by 2 miles (4.85 acres).

2.3 Alternatives Considered But Not Analyzed In Detail

Other locations for the Proposed Action were considered. The present location of the Proposed Action was chosen to utilize existing disturbance. No significant issues were identified for the present location of the Proposed Action during the following activities:

1. On-site inspections;
2. Cultural Resources Inventory;
3. Threatened, Endangered and Special Status Species Surveys of the location of the Proposed Action; and
4. Review of Navajo Nation Department of Fish and Wildlife species of concern known to occur or with the potential to occur on the 7.5 minute Newcomb and Sheep Springs, NM Quadrangle.

No additional alternatives for the Proposed Action have been considered.

3. Description of Affected Environment

This section describes the environment that would be affected by implementation of the alternatives described in Section 2. Aspects of the affected environment described in this section focus on the relevant major resources or issues. Certain critical environmental components require analysis under BLM policy. These items are included below in Table 3.0. Following the tables, only the aspects of the affected environment that are potentially impacted are described.

Table 3.0a: Critical Elements of the Affected Environment

Resources	**Located in Project Area**	**Not Located in Project Area**	**Further Analysis Presented in Text**	**Basis for No Further Analysis**
Air Quality	X		X	
Areas of Critical Environmental Concern		X		
Cultural Resources	X		X	
Native American Religious Concerns		X		There are no known traditional cultural properties in the area of the Proposed Action.
Environmental Justice	X		X	
Farmlands, Prime or Unique		X		
Floodplains		X		A review of the Federal Emergency Management Agency Flood Insurance Rate Map for the area of the Proposed Action indicates that the Proposed Action is not located within 100-year floodplain. Therefore, there will be no involvement with any 100-year floodplain as a result of the construction of the Proposed Action. (USDOI, 2009).

Resources	Located in Project Area	Not Located in Project Area	Further Analysis Presented in Text	Basis for No Further Analysis
Invasive, Non-native Species	X		X	A botanical survey of the area of the Proposed Action (Appendix 4) indicated the presence of halogeton (*Halogeton glomeratus*), an invasive non-native species in the project area. No other invasive or non-native species were found in the project area. Any future infestations should be handled according to directives set forth in Section 3.
Threatened or Endangered Species		X		There are no known threatened or endangered species or species of concern known to occur within one mile of the project area (Appendix 3). The Proposed Action was surveyed for listed species with the potential to occur in the Newcomb and Sheep Springs, NM 7.5 minute quadrangle. A complete listing of habitat and species found during the surveys is contained in the Biological Assessment attached as Appendix 4.
Wastes, Hazardous or Solid			X	
Water Quality – Surface/Ground	X		X	
Wetlands/Riparian Zones		X		
Wild and Scenic Rivers		X		
Wilderness		X		

Table 3.0b: Non-Critical Elements of the Affected Environment

Resources	Located in Project Area	Not Located in Project Area	Further Analysis Presented in Text	Basis for No Further Analysis
General Topography/Surface Geology	X		X	
Mineral Resources	X		X	The purpose of the Proposed Action is to mine gravel. No other mineral resources should be impacted by the Proposed Action.
Soils/Watershed/Hydrology	X		X	
Paleontology		X		
Vegetation, Forestry	X		X	
Livestock Grazing	X		X	See Land Use Section 3.6 for further analysis.
Special Status Species		X		
Wildlife	X		X	
Wild Horse and Burros		X		

Resources	Located in Project Area	Not Located in Project Area	Further Analysis Presented in Text	Basis for No Further Analysis
Recreation		X		The Proposed Action is not located in a designated recreation area and does not receive any dispersed recreation.
Visual Resources	X		X	
Public Health and Safety			X	
Noise		X		The Proposed Action would be located in a relatively isolated location and is not in or within 400 feet of a BLM designated Noise Sensitive Area (NSA), nor is the pit located within 400 feet of any dwelling, residence, or building. There are no houses located within a quarter mile of the Proposed Action.

3.1 General Topography/Surface Geology

The pit would be excavated on a relatively flat area on a mesa top. The soil in the area of the proposed pit and most of the existing access is fine sandy loam, with areas of sandy clay loam. These soils were derived from fan alluvium derived from sandstone and shale (USDA 2009).

3.1.1. Direct and Indirect Effects

1. A direct effect to the natural topography would result from leveling of the area for construction activities.
2. An indirect effect to natural drainage patterns would result from leveling of the natural topography for the pipeline construction.
3. An indirect effect to soil and seed bank disturbance/loss would result from leveling of the natural topography.

3.1.2. Mitigation

1. Surface disturbance and vehicular traffic would be limited to approved locations to reduce the area of disturbance.
2. Disturbed areas would be reclaimed pursuant to Appendix 2, Section 6. Reseeding would help prevent soil loss and seed bank disturbance/loss. Successful reclamation will take two to three years.
3. Use of Best Management Practices listed in Appendix 2.

3.2 Air Quality

Air quality in the San Juan Basin is affected both by nearby industry and by natural terrain. The primary sources of air pollutants in the basin are from electrical power generation plants, oil/gas refineries and treating facilities and compressor stations. Additional air quality impairment results from the cumulative impact of area motor vehicle emissions and dust, and natural gas well pads. Since the San Juan Basin is a natural depression, air masses sometimes stagnate from lack of circulation resulting in diminishing air quality. The New Mexico Air Quality Bureau (NMAQB) is responsible for enforcing the state and national ambient air quality standards in New Mexico. Any emission source must comply with the NMAQB regulations (USDI, BLM 2003b).

The project area lies within the Four Corners Interstate Air Quality Control Region. Initial cumulative air quality analysis was conducted in the final EIS for the Proposed Farmington Resource Management Plan (USDI, BLM 2003a). At the present time, the counties that lie within the jurisdictional boundaries of the FFO are classified as in attainment of all state and national ambient air quality standards as defined in the Clean Air Act of 1972, as amended (USDI, BLM 2003b). However, during the summers of 2000 through 2002, ozone levels in San Juan County were approaching non-attainment. Additional modeling and monitoring was conducted by Alpine Geophysics, LLC and Environ International Corporations, Inc., in 2003 and 2004. Results of the modeling suggest the episodes recorded in 2000 through 2002 were attributable to regional transport and high natural biogenic source emissions. The model also predicted that the region will not violate the ozone NAAQS through 2007 and that the trends in the 8-hr ozone values in the region are declining. There is no indication at this time that the approval of the proposed action would result in a violation of ambient air quality standards.

Recently, the BLM initiated the process by which future natural gas development would occur under the jurisdiction of the Durango, Colorado San Juan Public Lands Center. The cumulative air quality impact assessment performed by Durango, which included Farmington's potential emission sources, determined that potential visibility impacts to federal PSD Class I Areas (Mesa Verde National Park and the Wenimuche Wilderness Area) could occur. Additional air quality monitoring and modeling may be required. The BLM will work directly with the state regulatory agency to assure that any data gathered meets state standards. Results may require additional mitigation measures on future projects.

USEPA, Region IX, and the Navajo Nation EPA Air Quality Control program are responsible for administering air quality regulations on Navajo Tribal Trust and Allotted Lands in New Mexico. Navajo Nation Air Quality Control program (NNAQCP) is responsible for the implementation and enforcement of the Navajo Air Pollution Prevention and Control Act (NAPPCA), as described in Title 4, Chapter 11, Sec. 1101-1162 of the NAPPCA and encompassing the area defined in 7 NN Sec. 254.

3.2.1. Direct and Indirect Effects

1. There would be a short-term increase in dust during the upgrading of the existing access road.
2. The Proposed Action would lead to a long-term local increase in combustive emissions from operating vehicles, earth moving, crushing and separating equipment.

3.2.2 Mitigation

1. Recon would apply water for dust control if necessary.
2. Surface disturbance and vehicular traffic would be limited to the approved locations to reduce combustive emissions and dust.
3. Disturbed areas will be reclaimed pursuant to Section 6 of Appendix 2.

4. Crushing and separating operations at the gravel pit will be performed by a contractor. The contractor will be responsible for obtaining the required permits from the Navajo Nation Environmental Protection Agency Air Quality Control Program.

3.3 Water Quality: Surface and Groundwater

The hydrologic setting of the area is characterized by several ephemeral drainages filled with alluvium which is the principle source of ground water recharge. Surface flows are associated with small ephemeral drainage from snow melt, and summer thunderstorms. These small drainages are categorized as sandy, silty, clayey or gravelly sediment on the floodplain or streambeds. The alluvial cover usually conceals evidence of discharge, and white salt or alkali deposits associated with small field springs are often the only surface expression of ground water discharge near the area. Most discharge to the alluvial channels is lost by evapotranspiration. However, some water also moves as subsurface flow. The flows associated with ephemeral drainage are classified as calcium sulfate and sodium sulfate water. Predominate ions are sodium (Na) and sulfates (SO_4) with increasing concentrations as the flow moves downstream. Salinity (salt) concentrations also increase in the water as it flows downstream. This is a result of porous sandstone, inter-bedded shale and dissolved solids which are inorganic ions of sodium, potassium, calcium, magnesium, bicarbonate, chloride and sulfates.

Precipitation is the primary source of groundwater. Permeability is often low, reducing yields to 5 to 50 gallons per minute depending on where you are in the San Juan Basin. Deeper aquifers have a greater yield often in the 100 gallon per minute range.

Local surface drainage in the area of the Proposed Action is northeast off of Grey Mesa into an unnamed ephemeral wash that drains into Captain Tom Wash then on to the Chaco River. Ephemeral flows are limited to snow melt and rainfall. Average annual precipitation in the project areas is 5.97 inches [WRCC 2009].

The communities of Newcomb and Sheep Springs produce water from several groundwater sources including alluvium and the Morrison, Menefee, Gallup Sandstone, and Dakota formations (Navajo Gallup Water Supply Project, Technical Memorandum, March 16, 2001). The New Mexico State Engineer Office Waters Database has no record of water, injection or disposal wells located in the area of the Proposed Action (NMSEO 2009). There are no springs on the sides of the mesa which could indicate shallow depth to groundwater. Due to the deep water table, there are no anticipated affects from excavation on groundwater resources. The excavation depth would not exceed 8 feet.

3.3.1. Direct and Indirect Effects

1. Increased sediment loading to the adjacent surface drainages through runoff of disturbed soils.
2. Spilled contaminants from operating equipment or vehicles getting into surface or ground hydrology.

3.3.2. Mitigation

The following actions will be taken to protect Surface and Groundwater resources:

1. Reclamation and Erosion and Sediment Control procedures in Section 6 of Appendix 2.
2. Any spilled contaminants will be cleaned up as soon as possible to prevent run-off of contaminants into surface hydrology or infiltration into groundwater.

3.4 Soils – Watershed – Hydrology

The soils in the San Juan Basin were formed primarily in two kinds of parent material: alluvial sediment and sedimentary rock. The alluvial sediment is material that was deposited in river valleys and on mesas, plateaus, and ancient river terraces. The material has been mixed and sorted in transport and has a wide range in mineralogy and particle size. Sedimentary parent material consists mainly of sandstone and shale bedrock. These shale and resistant sandstone beds form prominent structural benches, buttes and mesas bounded by cliffs.

The soils in the area of the proposed pit and existing access/haul road are Hamburn clay loam, Badland-Genats complex and the Mesa Fine sandy loam. The approximate areas of the project located in each soil mapping unit are shown in Appendix 6, Web Soil Survey Map. Also included in Appendix 6 are the soil descriptions for each of these units.

The San Juan Basin consists of broad mesas interspersed with many deep canyons with steep canyon walls, dry washes, entrenched narrow valleys, alluvial fans and floodplains. Elevations range from approximately 4,800 feet, where the San Juan River flows into Utah, to approximately 8,800 feet near the Jicarilla Apache land. The planning area is divided into watersheds based on the Hydrologic Units (4^{th} level) delineated by the USGS. Principally, the administrative area under the jurisdiction of the Farmington Field Office consists of five of these

4th level hydrologic watershed units. These watershed units are: (1) Middle San Juan, (2) Animas, (3) Upper San Juan, (4) Blanco Canyon, and (5) Chaco. The Proposed Action is located in the Chaco watershed unit.

3.4.1. Direct and Indirect Effects

1. Soils would be structurally reduced and mixed, exposed to the elements of wind and water erosion, and compacted.
2. Due to wind and water, the soils would be subject to an undetermined amount of erosion until vegetation is established.
3. Natural drainage patterns would be disrupted during the Proposed Action.

3.4.2. Mitigation

1. Reclamation and Erosion and Sediment Control procedures in Section 6 of Appendix 2.
2. Use of Best Management Practices listed in Appendix 2 would reduce impacts to soils, watershed and hydrology.

3.5 Hazardous or Solid Waste Materials

As a result of the Proposed Action, solid waste materials would be generated. Generation of hazardous waste would not be expected. If hazardous waste is inadvertently generated, the proper authorities would be consulted regarding the disposal of such waste.

3.5.1. Direct and Indirect Effects

Trash and unwanted materials would be generated by construction and operation.

3.5.2. Mitigation

The operations trailer will have self contained water and sewage tanks. Sewage will be hauled to a state approved dump station off the reservation. A trash cage or dumpster will be placed next to the camper and scales. Trash cage or dumpster will be hauled to an approved transfer station or landfill.

3.6 Land Use

The Proposed Action would be located on Navajo Tribal Trust Surface. The overall site is moderately to heavily disturbed from previous gravel pit activities, grazing, and human activities such as refuse dumping, with almost no disturbance along the western boundary of the expansion site.

3.6.1. Direct and Indirect Effects

The Proposed Action would clear from 16.6 acres at a time with a maximum disturbance of 83.73 acres depending on the gravel market. The road consists of 4.85 acres of existing disturbance. Clearing of vegetation would have a direct effect on livestock grazing in the area.

3.6.2. Mitigation

1. Reclamation and re-vegetation of the Proposed Action as stated in Section 6 of Appendix 2. Successful reclamation is expected to take two to three years.
2. Field Clearance has been granted for the Proposed Action.

3.7 Vegetation, Forestry

The access road is located in the shallow basin adjacent to Grey Mesa and begins on the west side of US 491. The road then travels south-southwest, climbing up the mesa side to the north side of the gravel pit expansion. Existing habitat at the access road consists of barren, sandy gravel surfaces with sparse vegetation (Figure 2 - Appendix B of Biological Assessment attached as Appendix 4 of this document). A power line crosses the access road at the eastern end, near US 491. Vegetation is sparse along the access route and is predominated by salt desert scrub with species such as shadscale (*Atriplex confertifolia*) and alkali sacaton (*Sporobolus airoides*).

The pit expansion site is located on the top of Grey Mesa. The dominant plants are shadscale and alkali sacaton with areas of galleta (*Pleuraphis jamesii*). Winterfat (*Krascheninnikovia lanata*) is common in the west third of the area. Russian-thistle (*Salsola tragus*) and false buffalo-grass (*Munroa squarrosa*) are scattered throughout and are occasionally dominant. The plant community along the rocky rim of the southern boundary of the project area is dominated by purple three-awn (*Aristida purpurea*).

Refer to the Biological Assessment in Appendix 4 for more information.

3.7.1. Direct and Indirect Effects

The Proposed Action would clear 83.73 acres of new disturbance.

3.7.2. Mitigation

Reclamation of the Proposed Action as outlined in Section 6 or appendix 2 would mitigate impacts to vegetation and forestry from the construction of the Proposed Action. Reseeding would replace vegetation removed during operation of the pit. Successful reclamation is expected to take two to three years.

3.8 Invasive, Non-native Species

A Biological Assessment of the area of the Proposed Action (Appendix 4) indicated the presence of halogeton (*Halogeton glomeratus*), an invasive non-native species. No other invasive or non-native species were found in the project area.

3.8.1. Direct and Indirect Effects

Noxious weeds may become established in disturbed areas within the Proposed Action.

3.8.2. Mitigation

Recon will make every effort to ensure that noxious weeds do not spread over disturbed areas. If noxious weeds become established within the Proposed Action, Recon would contact the Navajo Nation EPA Pesticides Program, Glenna Lee, Program Manager (928) 871-7815 for list of approved herbicides and applicators.

3.9 Wildlife

There are several residences along the southeast edge of the site, near the beginning of the access road, as well as a horse corral at the south edge. Domestic horses were on site during the wildlife survey. With the exception of the mesa sides and some grassland habitat, there are few habitat features of wildlife value in the general area. Although there is a small drainage lined with several small salt cedar (*Tamarix sp.*) in the basin, there are no wetlands, perennial flows, or apparent water sources.

Refer to the Biological Assessment in Appendix 4 for more information.

3.9.1. Direct and Indirect Effects

The wildlife that uses the site may be displaced during construction. Removal of vegetation for construction of the Proposed Action would reduce wildlife forage in the area.

3.9.2. Mitigation

Reclamation of the Proposed Action as outline in Section 6 of Appendix 2 would reduce the long-term impacts to wildlife that use the area. Reseeding disturbed areas would replace vegetation removed during operation of the pit. In some instances, there is a benefit from successful reclamation due to an increase in vegetative cover and wildlife forage. Successful reclamation is expected to take two to three years.

3.10 Visual Resources

Visual Resource Management (VRM) on public lands is conducted in accordance with BLM Handbook 8410 and BLM Manual 8411. Further details of the Farmington Field Office VRM Program are contained on pages 2-9 to 2-10 and 3-61 to 3-63 of the Farmington PRMP/FEIS. The proposed project falls outside the VRM designation. The Proposed Action would sit on top of Grey Mesa Southwest of Newcomb, New Mexico. All staging and crushing would be located on top of the mesa at the pit location. There are houses located south of the Proposed Action below the mesa top.

3.10.1. Direct and Indirect Effects

Impacts to visual quality would come from dust, truck traffic and placement of heavy equipment during operation of the pit.

3.10.2. Mitigation

1. Reclaiming the Proposed Action as outlined in Section 6 of Appendix 2 will reduce impacts to visual resources.
2. Reseeding will stabilize the soil and reduce blowing dust, Recon will apply water for dust control if necessary until vegetation is re-established.
3. Limiting vehicle traffic/haul trucks to designated areas will also reduce visual impacts.

3.11 Cultural or Historical Values

A Cultural Resources Inventory of the Proposed Action was performed by Complete Archeology Service Associates. Three previously recorded sites are located along the existing access. No new Cultural Resource, eligible properties, non-eligible properties or archaeological resources were found in the area. A Cultural Resources Compliance Form is attached as Appendix 5.

3.11.1. Direct and Indirect Effects

1. There is a potential impact to the three previously recorded sites during upgrades of the existing access.
2. Potential exists for the Proposed Action to impact undiscovered or improperly inventoried cultural resources that may be discovered during construction of the Proposed Action.

3.11.2. Mitigation

1. No widening of the existing access road will be done to avoid the three previously recorded sites.
2. Any cultural and/or paleontology resource (historic or prehistoric site or object) discovered by Recon or its contractors during the Proposed Action, or any person working on their behalf, would be immediately reported to the Navajo Nation

Historic Preservation Department (NNHPD) at (928) 871-7148 and/or the BLM Farmington Field Office Archaeologist. Recon or its contractors would suspend all operations in the immediate area of such discovery until approval to proceed is issued by NNHPD. An evaluation of the discovery would be made by the NNHPD archaeologist to determine appropriate action to prevent the loss of significant cultural or scientific values.

3.12 Environmental Justice

Executive Order 12898 requires federal agencies to assess projects to ensure there is no disproportionately high or adverse environmental, health, or safety effects on minority and low-income populations. Minorities comprise a large proportion of the population residing inside the boundaries of the Farmington Field Office (see pages 3-106 to 3-107 of the PRMP/FEIS for more details on ethnicity and poverty rates).

3.12.1. Direct and Indirect Effects

There are no houses located within a quarter mile radius of the Proposed Action. The closest houses are located south of the east end of the proposed pit expansion, below the mesa. It is not expected that minority or low income populations would be directly affected in the vicinity of the Proposed Action. Indirect effects could include positive effects due to overall employment opportunities related to the oil and gas and service support industry in the region as well as the economic benefits to state and county governments related to royalty payments and severance taxes. Negative effects could include a small increase in activity and noise disturbance in areas used for grazing, wood gathering, or hunting. However, these effects would apply to all public land users in the project area. A more detailed description of potential impacts is contained in the PRMP/FEIS p.4-120 and 4-129.

3.13 Public Health and Safety

3.13.1. Direct and Indirect Effects

Risks to the public associated with the operation of the gravel pit include increased traffic on public roads and potential air emission exposure.

3.13.2. Mitigation

1. Vehicle traffic will be limited to approved areas and roads.
2. Recon or its contractors will apply water for dust control if necessary.
3. The contractor conducting the crusher/separator operations will obtain all necessary air permits from the Navajo Nation Environmental Protection Agency.

4. Cumulative Effects

Past impacts to the area include the existing gravel pit and access road, residential development, power lines, and over grazing. The Proposed Action would increase long-term surface impacts by up to 83.73 acres. This proposed disturbance would add to the cumulative impacts to air quality, livestock grazing, noise levels, soil erosion and sedimentation into the local watershed. There are no other known development plans for the project area in the reasonable foreseeable future.

5. Consultation/Coordination

This section includes individuals or organizations from the public, public land users, the interdisciplinary team, and permitees that were contacted during the development of this document.

Table 5.1 Interdisciplinary Team

Interdisciplinary Team				
ID Team Member	Title	Organization	Performed Onsite Inspection?	Date of Onsite Inspection
Cynthia A. Dean	Consultant, Author, Environmental Assessment	Permits West, Inc.	NO	NA
June M. Galloway	Wildlife Biologist, Author, Biological Assessment	Permits West, Inc.	YES	6/9/2009
Brian Wood	Consultant, Author, Surface Use Plan	Permits West, Inc.	NO	NA
Marian Rhoman	Botanist	Permits West, Inc.	YES	6/17-19/2009
Laurens C. Hammack	Archaeologist	Complete Archaeological Service Associates	YES	6-/5-6/2009

5.1 Contact Information

Permits West, Inc.
37 Verano Loop
Santa Fe, NM 87508
505-466-8120 FAX: 505-466-9682

Recon Oil Company
920 E. Highway 66
Gallup, NM 87301

6. References

[NMSEO] New Mexico Office of the State Engineer, 2009. "Water Administration Technical Engineering Resource System (W.A.T.E.R.S. Database)" http://www.seo.state.nm.us/water-info/index.html

U.S. Department of the Interior, Bureau of Land Management. 2003. *Farmington Proposed Resource Management Plan and Final Environmental Impact Statement*. Farmington, New Mexico.

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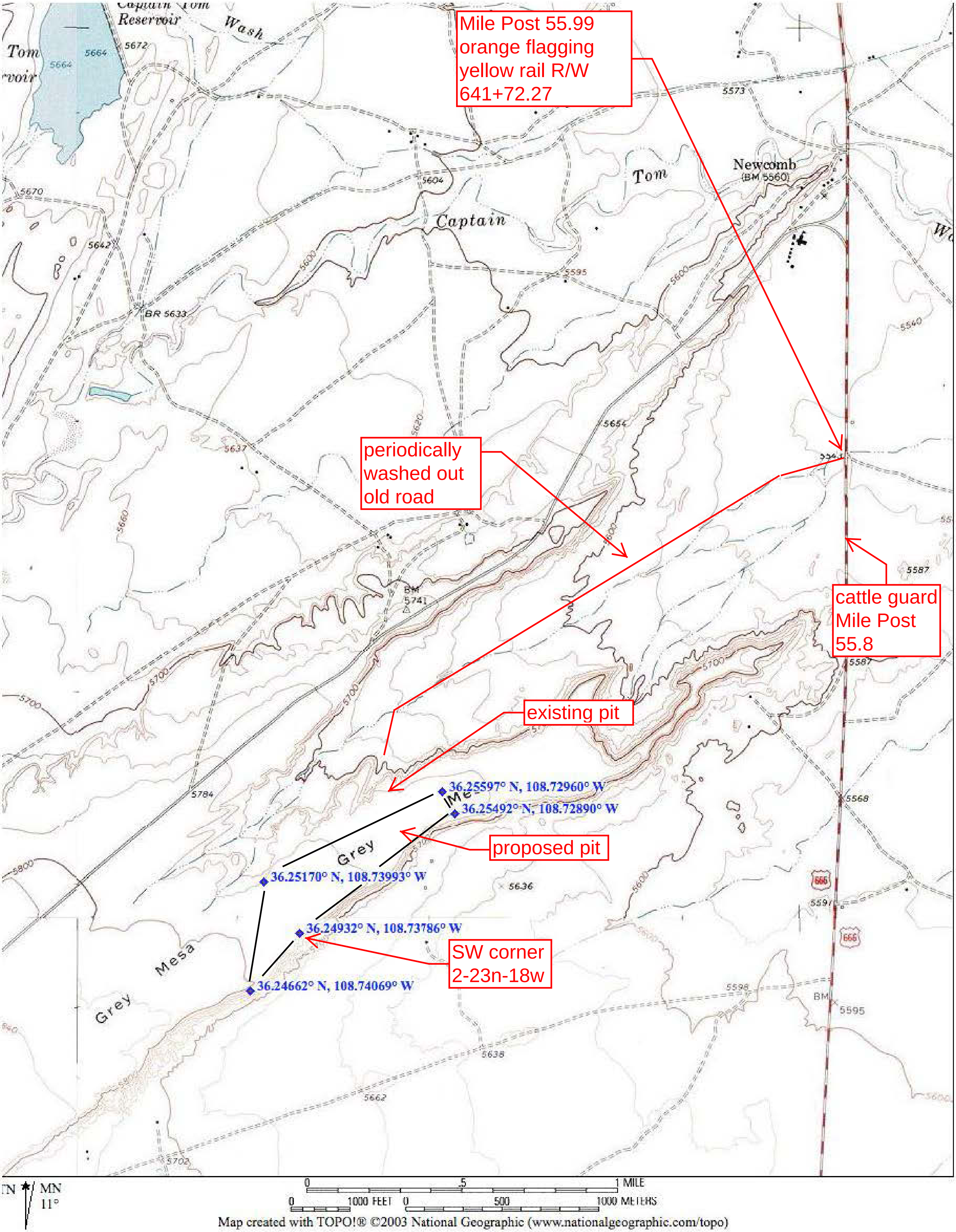
U.S. Department of the Interior (USDOI, 2009), Bureau of Land Management and United States Forest Service. 2008, www.geocommunicator.gov, accessed 7/19/2009.

Web Soil Survey, 2009. National Cooperative Soil Survey, *Soil Survey of San Juan County New Mexico, Eastern Part*. USDA 1980, United States Department of Agriculture, Soil Conservation Service, Soil Survey of San Juan county New Mexico Eastern Part. Accessed 7/17/2009. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

WRCC 2009 (Western Regional Climate Center) Newcomb, NEW MEXICO (296098) Period of Record Monthly Climate Summary Period of Record: 6/ 6/1948 to 4/30/1971 http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?nmnewc

6.1 Appendices

1. Location Map and Proposed Pit Expansion Plat
2. Surface Use Plan
3. Navajo Fish & Wildlife Correspondence Letter
4. Biological Assessment
5. Cultural Resources Compliance Form
6. Web Soil Survey Map and Soil Unit Descriptions
7. Biological Resources Compliance Form (BRCF)



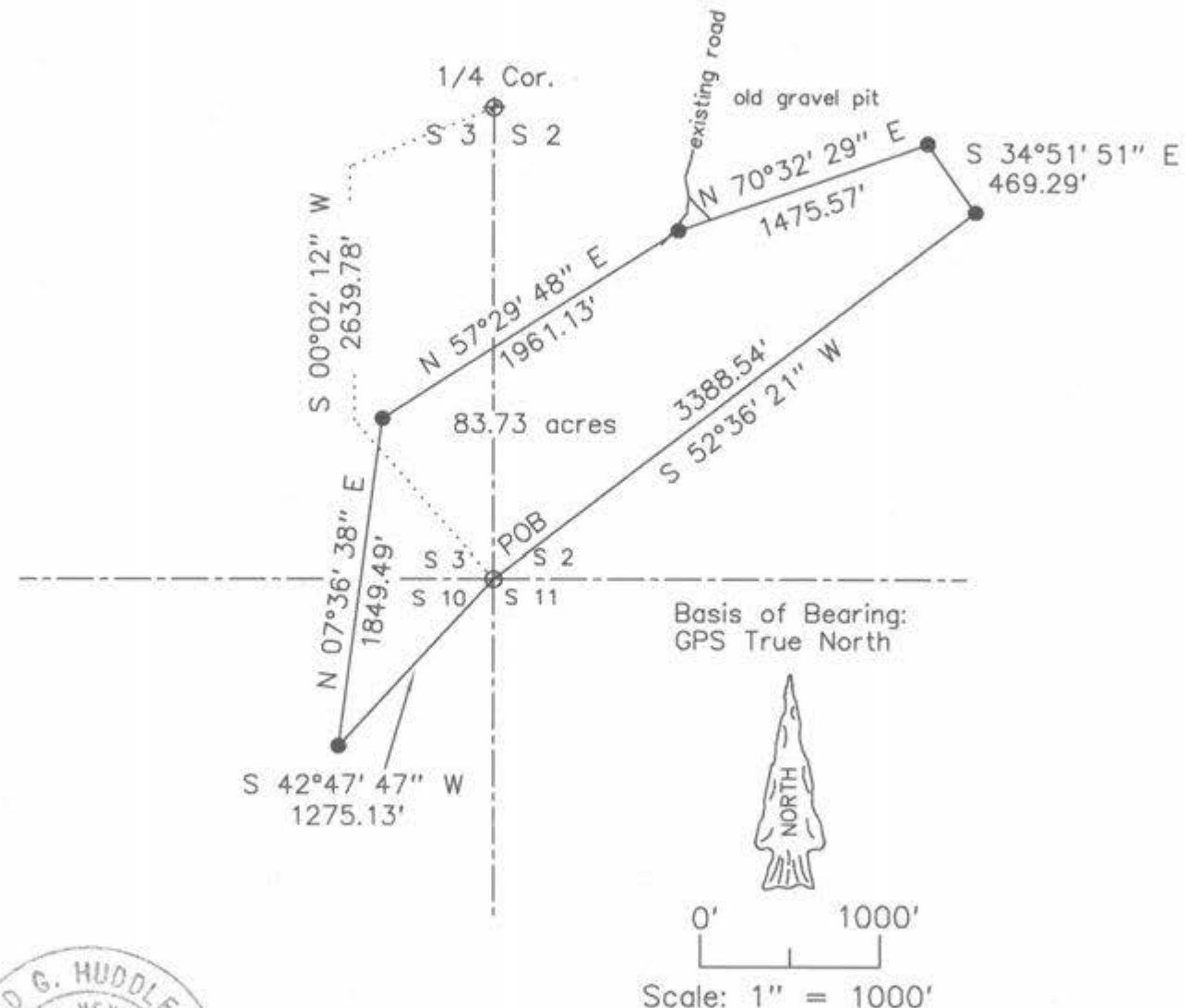
Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)

APPENDIX 1

LEGAL DESCRIPTION – 83.73 acres more or less

A tract of land contained in Sections 2, 3 and 10, T.23 N., R.18 W., NMPM, San Juan County, New Mexico, more particularly described as follows:

Beginning at the SW Corner of said Section 2;
thence, S 42°47' 47" W a distance of 1275.13 feet;
thence, N 07°36' 38" E a distance of 1849.49 feet;
thence, N 57°29' 48" E a distance of 1961.13 feet;
thence, N 70°32' 29" E a distance of 1475.57 feet;
thence, S 34°51' 51" E a distance of 469.29 feet;
thence, S 52°36' 21" W a distance of 3388.54 feet back to the point of beginning.
SUBJECT TO all easements of record or prescriptive.



I, Gerald G. Huddleston, a New Mexico registered Professional surveyor certify that I conducted and am responsible for this survey, that this survey is true and correct to the best of my knowledge and belief, and that this survey and plat meet the Minimum Standards for Surveying in New Mexico for a gravel pit.

I further certify that this survey is not a land division or subdivision as defined in the New Mexico Subdivision Act and that this is a survey of a proposed gravel pit.

HUDDLESTON LAND SURVEYING
P.O. DRAWER KK / CORTEZ, CO 81321 / 970-565-3330

APPENDIX 1

1. Pit Location

Pit area will not exceed 83.73 acres and will be located in Sections 2, 3, & 10, T. 23 N., R. 18 W., San Juan County, NM. This is ≈2-1/2 miles southwest of Newcomb. Proposed pit is immediately south and west of an abandoned depleted pit used from ≈1977 to ≈1983 for construction on US 666 (now 491) and Newcomb High School.

2. Access

Existing 2 mile long road will be upgraded. Road was built to access original pits and bypasses all houses. No house is within a quarter mile of the road. Upgrading will consist of rocking low water crossings and installing a cattle guard in the US 491 fence at Mile Post ≈55.99. Low water crossing work will consist of excavating a swath below grade and piling the excavated material atop the arroyo bank. Swath will then be packed with pit run rock. Road dimensions will be 20' x 2 miles = 4.85 acres. Road crosses Section 2, T. 23 N., R. 18 W. and Sections 35 and 36, T. 24 N., R. 18 W.; all San Juan County, New Mexico.

3. Land User Consent

Field clearance request for 88.58 acres (83.73 for pit + 4.85 for road) was received by Project Review Office on June 19, 2009. Newcomb Chapter has endorsed the pit
.

4. Environmental Assessment

No Threatened or Endangered species were found during June, 2009 surveys. An environmental assessment (EA) is being prepared.

5. Archaeology Report

Report was filed June 15, 2009. Archaeologist recommended clearance, provided the road is not widened beyond 20'. HPD has completed its review and forwarded it to BIA for approval.

6. a. Mining Sequence & Timing

Operations will initially move south from the abandoned pit, and then west. No more than 20% (≈16.6 acres) of the pit will be excavated at any one time. As each fifth of the pit is excavated, the previous fifth of the pit will be reclaimed. Full development of each fifth will depend on the gravel market. It is anticipated the initial market will be for construction companies widening US 491 to four lanes.

6. b. Configuration

Maximum depth will be ≈8'. Maximum width of the 83.73 acres will be ≈1,000'. Maximum length of the 83.73 acres will be ≈4,500'. Maximum height above original grade will be ≈10' (soil piles). Crusher fines and marketable material will be piled in the bottom of the pit.

6. c. Reserves

An estimated 860,000 cubic yards (= 1,075,000 tons @ 2,500 pounds per cubic yard) could be excavated. This estimate is based on:

50' wide unexcavated swath on all sides (for soil piles & erosion control)

8' depth - 6" of topsoil to be saved = 7-1/2' of useable material

5:1 slopes

An estimated 215,000 tons could be excavated per year over the five year term of the lease, depending on market conditions.

6. d. Slope Stability

Pit slopes will be no steeper than 5:1. There will be no high wall.

6. e. Pile Stability

Pile slopes will be no steeper than 1:1. This applies to topsoil, subsoil (overburden), unprocessed rock, gravel, sand, and unmarketable fines.

6. f. Methods & Equipment

The top 6" of soil will be stripped by a bulldozer and stockpiled around the perimeter of the area to be excavated. (No material will be pushed over cliffs.) The topsoil pile will be broadcast seeded and covered with mulch. Geotextile fences or straw bale barriers will be installed on the outside (opposite side of pile from pit) of the topsoil piles to control storm water runoff.

Subsoil (overburden), if any, will be excavated by a bulldozer and piled between the topsoil pile and the pit.

Gravel will be ripped with a bulldozer and pushed into the primary crusher, or excavated by a front end loader or tracked excavator and deposited into a dump truck. The dump truck will haul its load to the primary crusher. The load will either be dumped directly into the crusher or beside the crusher from where it will be pushed into the crusher.

The primary crusher will crush the rocks to ≈6" or less in diameter. The crushed rock will then go through a sorter which will distribute the rock via conveyor belt(s) to the secondary crusher(s). The secondary crusher(s) will crush the rock even smaller. Rock

discharged from the secondary crusher will either be stockpiled for future sale, or loaded into dump trucks and hauled to the customer's project.

A camper trailer and scales will be set near the pit entrance/exit. Trailer will have self contained water and sewage tanks. Sewage will be hauled to a state approved dump station off the reservation. A trash cage or dumpster will be placed next to the camper and scales. Trash cage or dumpster will be hauled to an approved transfer station or landfill.

6. g. Drilling & Blasting

There will be no drilling or blasting.

6. h. Geology & Hydrology

The Quaternary gravel deposit overlies the Menefee shale. The gravel appears to have been shed from the Chuska Mountains hundreds of thousands, if not millions, of years ago. There are no water wells within a mile radius. There are no springs on the sides of the mesa which could indicate shallow depth to groundwater. There are no drainage channels or arroyos on the proposed 83.73 acres. Grey Mesa slopes ≈1% from the high point (southwest side at ≈5,800') to the low point (northeast side at ≈5,760'). Pit will be excavated so storm water runoff slopes inward, not outward.

6. i. Erosion & Sediment Control

Erosion and sediment will be controlled in the short term by seeding and mulching soil piles, installing storm water runoff barriers (e. g., straw bales, geotextile fabric fences) around the outside of the soil piles, and sloping the pit towards the interior to form a basin.

Erosion and sediment will be controlled in the long term by contouring slopes to no steeper than 5:1, spreading subsoil, spreading topsoil, ripping compacted areas at least 12" deep on the contour, and seeding.

Road will similarly reclaimed. In addition, road will be blocked at each end and water bars installed. Water bars will be dug at least half in cut and at a ≈45° angle. Water bar spacing will be every ≈100 yards on flat areas and every ≈100' the first quarter mile north of the pit.

All disturbed areas will be harrowed and broadcast seeded with the Navajo Department of Agriculture desert grassland mix of 1.5 pounds per acre alkali sacaton, 1.5 pounds per acre curly grass, 2 pounds per acre Indian ricegrass, 1.5 pounds per acre sand dropseed, 3 pounds per acre western wheatgrass, 2 pounds per acre four wing

saltbush, 1.5 pound per acre shadscale, and 1/2 pound per acre bandera penstemon. The seed bed will be drug with a chain or bed spring to cover the seed.

6. j. Contours
Reclaimed pit will slope inward at no steeper than 5:1.

6. k. Bonds
Navajo Nation Minerals Department will determine the bond amounts. Bonds are expected to be at least $10,000.

6. l. Revegetation
Successful revegetation will be achieved by stockpiling the top ≈6" of soil, stockpiling topsoil separate from the subsoil, seeding and mulching the topsoil pile for interim reclamation, controlling for noxious weeds, ripping compacted areas at least 12" deep to allow easier root growth, ripping on the contour to trap storm water runoff and enhance growth, spreading topsoil evenly, and seeding with the indicated grass, shrub, and forb seed mix. The seed mix variety (8 species) will avoid a monoculture which would be more vulnerable to drought or pests. Once seeded, reclaimed areas will be fenced.

Success will be measured by establishing two fenced control areas. One will be northeast of the pit and the other will be southwest of the pit. Each will be at least 100 yards from the pit, but no more than 200 yards from the pit. Each will be ≈30' x ≈30'. Fences will be livestock proof. The per cent of ground cover in each will be measured. Successful revegetation will be considered achieved if the % of ground cover (excluding noxious weeds) in two random ≈100 yard point intercept transects across the reclaimed area is at least 90% of that found in the two control areas after two years.

6. m. Top Soil
The top 6" of top soil will be piled around the perimeter of the pit, seeded, and mulched. The seeding and mulch will preserve the soil fertility and protect it from erosion until it is used in final reclamation.

7. Health & Safety
Recon will comply with all Federal and Tribal health and safety regulations. No material will pushed over cliff edges.

8. Water Use
The only water planned to be used at the pit is for the camper trailer. That water will be hauled Recon's office. If any water is needed from Tribal land, then a water use permit will be obtained from the Navajo Nation Department of Water Resources.

THE
NAVAJO
NATION

JOE SHIRLEY, JR.
PRESIDENT
Ben Shelly
VICE PRESIDENT

Dept of Fish & Wildlife • P.O. Box 1480 • Window Rock, AZ 86515 • (928) 871-6451 • Fax (928) 871-7069

29 June 2009 File#09PERMI7

Brian Wood
Permits West, Inc.
37 Verano Loop
Santa Fe, NM 87508

SUBJECT: RECON OIL COMPANY PROPOSED GREY MESA GRAVEL PIT
LOCATED IN LEGAL DESCRIPTION SEC. 2, 3, 10 & 11,
T23N, R18W, SECTIONS 35 & 36, T24N, R18W
SAN JUAN COUNTY, NM

Mr. Wood:

The following information on species of concern[1] is provided in response to your 02 June 2009 request concerning the subject project, which consists of the Recon Oil Company proposed Grey Mesa gravel pit in San Juan County, NM. The legal description of the project site is T23N, R18W, Sections 2, 3 10 & 11 and T24N, R18W, Sections 35 & 36, San Juan County, NM.

Although the Navajo Fish and Wildlife Department (NFWD) has no record of species of concern occurring on or near the project site(s) at this time, the potential for certain species of concern to occur needs to be evaluated.

Species of concern with **potential** to occur on the 7.5-minute *Newcomb, NM* quadrangle(s) containing the project boundaries include the following. Potential is based primarily on quadrangle-wide coarse habitat characteristics and species range information. Your project biologist should determine habitat suitability at the project site(s).

1. Antilocapra americana (Pronghorn); NESL group 3.
2. Aquila chrysaetos (Golden Eagle); NESL group 3; MBTA; EPA.
3. Buteo regalis (Ferruginous Hawk); NESL group 3; MBTA.
4. Charadrius montanus (Mountain Plover); NESL group 4; ESA proposed threatened; MBTA.
5. Dipodomys spectabilis (banner-tailed kangaroo rat).Dipodomys spectabilis (banner-tailed kangaroo rat);NESL Group 4,

[1] "Species of concern" include protected, candidate, and other rare or otherwise sensitive species, including certain native species and species of economic or cultural significance. For each species, the following tribal and federal statuses are indicated: Navajo Endangered Species List (NESL), federal Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), and Eagle Protection Act (EPA). No legal protection is afforded species with **only** ESA candidate or NESL group 4 status; please be aware of these species during surveys and inform the NFWD of observations. Documentation that these species are more numerous or widespread than currently known, and addressing these species in project planning and management is important for conservation and may contribute to ensuring they will not be uplisted in the future. Species without ESA or NESL legal protection (e.g., NESL group 4 species) are only included in responses on a regular basis and may not be included in this response. Please refer to the NESL for a list of group 4 species; contact me if you need a copy.

6. Mustela nigripes (Black-footed Ferret); NESL group 2; ESA endangered.
7. Rana pipiens (Northern Leopard Frog); NESL group 2.
8. Vulpes macrotis (Kit Fox); NESL group 4.
9. Sclerocactus mesae-verdae (Mesa Verde Cactus); NESL group 2; ESSA threatened.
10. Puccinellia parishii (Parish's Alkali Grass); NESL group 4.

AREA 3: LOW SENSITIVITY WILDLIFE RESOURCES

Potential for the black-footed ferret should be evaluated if prairie-dog towns of sufficient size (per NFWD guidelines) occur in the project area.

Potential for Puccinellia parishii should be evaluated if wetland conditions exists that contain white alkaline crusts.

Biological surveys need to be conducted during the appropriate season to ensure they are complete and accurate please refer to NN Species Accounts.[4] Further questions pertaining to surveys should be referred to Species Account. Surveyors on the Navajo Nation must be permitted by the Director, NFWD. Contact Jeff Cole at (928) 871-7068 for permitting procedures. Questions pertaining to surveys should be directed to the NFWD Zoologist (David Mikesic) for animals at 871-7070, and Botanist (Daniela Roth) for plants at (928)523-8445. Questions regarding biological evaluation should be directed to Jeff Cole (Acting Environmental Reviewer) at 871-7060.

Any settling or evaporation pits that could hold contaminants should be lined and covered. Covering pits, with a net or other material, will deter waterfowl and other migratory bird use. Lining pits will protect ground water quality.

Potential impacts to wetlands should also be evaluated. The U.S. Fish & Wildlife Service's National Wetlands Inventory (NWI) maps should be examined to determine whether areas classified as wetlands are located close enough to the project site(s) to be impacted. In cases where the maps are inconclusive (e.g., due to their small scale), field surveys must be completed. For field surveys, wetlands identification and delineation methodology contained in the "Corps of Engineers Wetlands Delineation Manual" (Technical Report Y-87-1) should be used. When wetlands are present, potential impacts must be addressed in an environmental assessment and the Army Corps of Engineers, Phoenix office, must be contacted. NWI maps are available for examination at the NFWD's Natural Heritage Program (NHP) office, or may be purchased through the U.S. Geological Survey (order forms are available through the NHP). The NHP has complete coverage of the Navajo Nation, excluding Utah, at 1:100,000 scale; and coverage at 1:24,000 scale in the southwestern portion of the Navajo Nation.

The information in this report was identified by the NFWD's biologists and computerized database, and is based on data available at the time of this response. If project planning takes more than two (02) years from the date of this response, verification of the information provided herein is strongly recommended. It should not be regarded as the final statement on the occurrence of any species, nor should it substitute for on-site surveys. Also, because the NFWD's information is continually updated, any given information response is only wholly appropriate for its respective request.

For a list of sensitive species on the Navajo Nation in addition to the species listed on the Navajo Endangered

[4] Available free of charge on our website at http://nnhp.navajofishandwildlife.org/

Species List (NESL) please refer to our website at www.nndfw.org.

An invoice for this information is attached.

If you have any questions I may be reached at (928) 871-6472.

Sonja Detsoi, Wildlife Tech.
Natural Heritage Program
Department of Fish and Wildlife

xc: file/chrono

APPENDIX 3

PERMITS WEST, INC.
PROVIDING PERMITS for LAND USERS
37 Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

BIOLOGICAL ASSESSMENT
FOR RECON OIL'S PROPOSED GREY MESA GRAVEL PIT EXPANSION AND ACCESS ROAD
SAN JUAN COUNTY, NEW MEXICO

PREPARED FOR

RECON OIL COMPANY
920 E. HIGHWAY 66
GALLUP, NM 87301

01 JULY 2009

BY JUNE M. GALLOWAY

APPENDIX 4

SUMMARY

Recon Oil Company (Recon) is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing 'abandoned' gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Sections 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. It is roughly ½ - three miles southwest of the town of Newcomb.

No threatened, endangered, or special status species were observed within or adjacent to the project area during the wildlife and botanical surveys conducted on June 08, 09, and 19, 2009.

1.0 INTRODUCTION

Recon Oil Company (Recon) is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing 'abandoned' gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Section 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. The proposed gravel pit expansion is in the NE/4 of Section 10, the SE/4 of Section 3, and the NE/4 of Section 2 (T. 23 N., R. 18 W.). The northern boundary is along an existing two-track road, with the existing abandoned gravel pit on the north side of the road at the east end. The eastern boundary is along an existing two-track road. The southern boundary is along the south edge of Grey Mesa. The western boundary is across undisturbed land.

The access road is in the SW/4, NW/4, and NE/4 of Section 2 (T. 23 N., R. 18 W.) and the SE/4 of Section 35 and SW/4 and NE/4 of Section 36 (T. 24 N., R. 18 W.). It begins on the west side of US Highway 491 in the NE/4 of Section 36 (T. 24 N., R. 18 W.) and heads west around the north side of a residential area. It continues southwest and then south to end at the proposed gravel pit expansion in the SW/4 of Section 2 (T. 23 N., R. 18 W.).

The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. It is roughly ½ - three miles southwest of the town of Newcomb (Appendix A).

This Biological Assessment (BA) was prepared to determine potential impacts of the proposed action to endangered, threatened, and candidate wildlife and plant species and habitats within the Grey Mesa project area, in accordance with Section 10 of the Endangered Species Act (ESA). Wildlife and plant surveys were conducted to determine potential presence of suitable habitat and/or site occupation of federally and Navajo Nation-listed threatened, endangered, or special status species.

2.0 METHODOLOGY

Prior to implementation of fieldwork and report preparation, the current lists of federal (USFWS, NM Ecological Field Services Office, 2009) and Navajo Nation (NMDGF, 2009) listed and special status/ sensitive animal species known to occur in San Juan County were reviewed (Tables 4.1a, 4.3a).

Wildlife surveys were conducted at the existing pit, proposed pit, and access road by walking transect lines, including a 1/2 mile buffer. Areas within a one mile radius with potentially suitable nesting habitat for raptors were also surveyed. The surveyor used 8 x 42 standard binoculars and a spotting scope for wildlife observation purposes. All vertebrate species detected by sight, sound, and sign were recorded. Weather conditions, altitude, and identifiable plant species were also recorded. Global positioning coordinates were recorded for any prominent features such as nest sites.

The botanical survey of the access road was accomplished by walking zigzag transects on either side of the existing road to a distance of 40 feet on each side. The expansion area was surveyed

by walking parallel transects across the area at a spacing of 50 to 100 feet apart. The emphasis of the survey was to inspect for listed species of concern. In addition, all plant species were identified in order to provide a more complete description of the environment

3.0 EXISTING HABITAT

3.1 EXISTING ABANDONED GRAVEL PIT

Habitat at the existing pit consists of relatively barren, arid landscape with patchy vegetation and $\geq$ 75% bare ground in some areas. The site is previously disturbed from gravel pit activities, which took place roughly 25 years ago, and grazing. Soils are gravelly and heavily eroded (Figure 1 - Appendix B). The abandoned gravel pit is located in a shallow, level wash with drainage to the southwest. What sparse vegetation exists at the site shows signs of moderate to heavy grazing from domestic horses and sheep. There are no perennial streams or wetlands.

3.2 PROPOSED GRAVEL PIT EXPANSION AND ACCESS ROAD

The access road is located in the shallow basin adjacent to Grey Mesa and begins on the west side of US 491. The road then travels south-southwest, climbing up the mesa side to the north side of the gravel pit expansion. Existing habitat at the access road consists of barren, sandy gravel surfaces with sparse vegetation (Figure 2 - Appendix B). A power line crosses the access road at the eastern end, near US 491. Vegetation is sparse along the access route and is predominated by salt desert scrub with species such as shadscale (*Atriplex confertifolia*) and alkali sacaton (*Sporobolus airoides*).

The pit expansion site is located on the top of Grey Mesa. The dominant plants are shadscale and alkali sacaton with areas of galleta (*Pleuraphis jamesii*). Winterfat (*Krascheninnikovia lanata*) is common in the west third of the area. Russian-thistle (*Salsola tragus*) and false buffalo-grass (*Munroa squarrosa*) are scattered throughout and are occasionally dominant. The plant community along the rocky rim of the southern boundary of the project area is dominated by purple three-awn (*Aristida purpurea*).

The soil is predominantly sandy clay loam with gravel and cobbles in the basin, with areas of clay loam and loamy sand. The mesa top is mostly sandy loam with a heavy gravel content. The soils are derived from the underlying Menefee formation (NMBGMR, 2003). Elevation throughout the project area ranges from approximately 5540 to 5800 feet.

There are several residences along the southeast edge of the site, near the beginning of the access road, as well as a horse corral at the south edge. Domestic horses were on site during the wildlife survey. With the exception of the mesa sides and some grassland habitat, there are few habitat features of wildlife value in the general area. Although there is a small drainage lined with several small salt cedar (*Tamarix sp.*) in the basin, there are no wetlands, perennial flows, or apparent water sources. The overall site is moderately to heavily disturbed from previous gravel pit activities, grazing, and human activities such as refuse dumping, with almost no disturbance along the western boundary of the expansion site.

4.0 SURVEY RESULTS

4.1 THREATENED, ENDANGERED AND SPECIAL STATUS WILDLIFE SPECIES

During the late afternoon of June 08 and morning of June 09, 2009, Wildlife Biologist June M. Galloway conducted a pedestrian survey at the project site. Weather was clear and breezy, with temperatures fluctuating greatly due to heavy thunder storms in the area.

No threatened, endangered, or special status wildlife species were documented within or adjacent to the project area during the wildlife surveys (Table 4.1a) (Appendix B). One species protected by the Migratory Bird Treaty Act (1918), common raven (*Corvus corax*), was observed nesting on-site at the time of the surveys. In addition, a red fox vixen with two kits was also documented.

Table 4.1a. Federal and Navajo Nation listed (NESL) threatened, endangered, and special status wildlife species with the potential to occur within the vicinity of the Proposed Action (San Juan County, NM) (2009).

Common Name (scientific name)	Federal Status	NESL	HABITAT ASSOCIATIONS	POTENTIAL TO OCCUR IN THE PROJECT AREA
MAMMALS				
Townsend's big-eared bat (*Corynorhinus townsendii*)	SOC	NESL 4	On the Navajo Nation, roosts and hibernates primarily in sandstone or limestone caves, lava tubes, mine tunnels, and man-made structures in a variety of habitats.	NP
Banner-tailed kangaroo rat (*Dipodomys spectabilis*)		Group 4	Lowland desert grasslands, sand dunes.	NP
Black-footed ferret (*Mustela nigriceps)*	E	Group 2	Open grasslands with large established prairie dog colonies.	NP
Kit fox (*Vulpes macrotis*)		Group 4	Open, arid lowland habitats.	NP
Pronghorn (*Antilocapra americana)*		Group 3	Grasslands, brushlands, bunch-grass and sagebrush areas of open plains and deserts.	NP
BIRDS				
Golden eagle (*Aquila chrysaetos)*		Group 3	A wide variety of open habitats, typically nests in steep cliffs > 30 meters in height.	NP
Ferruginous hawk (*Buteo regalis)*		Group 3	Open grasslands and deserts, typically nests atop rocky pinnacles, small buttes and cliffs	NP
Northern goshawk (*Accipiter gentiles*)		Group 4	Forest species – typically nests along drainages, canyon bottoms, or north-facing forested slopes with high canopy cover.	NP
American peregrine falcon (*Falco peregrinnus anatum)*	SOC	Group 4	Nests in sheer cliff faces typically > 30 meters in height, usually near water or mesic canyons. In migration, occurs in a variety of lowland, wetland habitats.	NP
Artic peregrine falcon (*Falco peregrinus tundrius*)	SOC		Highly migratory, nests on alpine islands and tundra regions.	NP
Black tern	SOC		Breeding habitat includes marshes,	NP

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(*Chlidonias niger*)			sloughs, rivers, lakeshores and impoundments. Prefers sheltered offshore waters and bays for non-breeding habitat.	
Mountain plover (*Charadrius montanus*)	SOC	Group 4	Seeks dry, disturbed, or intensively grazed, open, flat tablelands. Bare ground, short vegetation, and flat topography are indicators of ideal habitat.	NP
Western burrowing owl (*Athene cunicularia hypugaea*)	SOC		Grasslands and basin-prairie shrub, normally associated with prairie dog towns.	NP
Yellow-billed cuckoo (*Coccyzus americanus*)	C		Moist, dense riparian thickets, willow stands, overgrown pastures and orchards.	NP
Southwestern willow flycatcher (*Empidonax trailii extimus)*	E	Group 2	Cottonwood-willow riparian corridors.	NP
Baird's sparrow (*Ammodramus bairdii*)	SOC		Grasslands, weedy fields.	NP
HERPETOFAUNA				
Northern leopard frog (*Rana pipiens*)		Group 2	Breeds in wetlands with aquatic vegetation. Found in irrigation ditches, small streams, rivers. Newcomb, NM included in NN historical records.	NP
FISH				
Roundtail chub (*Gila robusta*)	SOC		Throughout Colorado River Basin. Inhabits open areas in deep pools and eddies in middle-sized and larger streams.	NP
INVERTEBRATES				
New Mexico silverspot butterfly *(Speyeria nokomis nitocris*)	SOC		Alpine meadows.	NP
San Juan checkerspot (*Euphydryas anicia chuskae*)	SOC		No habitat information available.	NP

Status
E Endangered T Threatened C Candidate NESL Navajo Endangered Species List SOC Species of Concern

Presence
K Known, documented observation within project area.
S Habitat suitable and species suspected to occur within the project area.
NS Habitat suitable but species is not suspected to occur within the project area.
NP Habitat not present and species unlikely to occur within the project area.

4.2 MIGRATORY BIRDS

Native migratory birds are protected under the Migratory Bird Treaty Act. Birds protected under the Act include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows and others, including their body parts (feathers, plumes etc.), nests, and eggs. The Act protects migratory birds from "take", with take being defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities". A "take" does not include habitat destruction or alteration, as long as

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these is not a direct taking of birds, nests, eggs, or parts thereof.

The overall project area is relatively denuded and there is additional disturbance from close proximity to local roads, a highway, and homes. Five (5) avian species documented during the wildlife surveys are protected under the Migratory Bird Treaty Act; turkey vulture (*Cathartes aura*), common raven (*Corvus corax*), western bluebird (*Sialia mexicana*), horned lark (*Eremophila alpestris*), and canyon wren (*Catherpes mexicanus*). If project activities take place after the primary nesting season (April 01 – July 31), no take of migratory birds is anticipated as a result of the proposed action.

4.3 THREATENED, ENDANGERED, AND SPECIAL STATUS PLANT SPECIES

The project area was surveyed on June 19, 2009, by botanist Marian Rohman. This report discusses the potential for disturbance to Mesa Verde cactus (*Sclerocactus mesae-verdae*) and Parish's alkali grass (*Puccinellia parishii*), plants identified by the Navajo Nation Natural Heritage Program (NNHP) as species of concern (Table 4.2a). Both species have the potential to occur on the Newcomb, NM, 7.5-minute quadrangle, which contains the boundaries of the project area (Detsoi, 2009).

Table 4.3a. Plants cited by the Navajo Natural Heritage Program**:** Mesa Verde cactus and Parish's alkali grass are identified by the Navajo Natural Heritage Program as species of concern that could occur in the project area. (Detsoi, 2009)

Parish's alkali grass (*Puccinellia parishii*)	Alkaline springs, seeps, or seasonally wet areas such as washes at 5000-7200 feet. The species requires continuously damp soils during its late winter to spring growing period. (McDonald, 1999a; Roth, 2001a)	No appropriate habitat: there are no alkaline springs, seeps, or seasonally wet areas in the project area. (NP)
Mesa Verde cactus (*Sclerocactus mesae-verdae*)	Sparsely vegetated salt desert scrub communities on low rolling clay hills formed from the Mancos or Fruitland Shale formations, occasionally on Menefee overlaying Mancos formation. It is most frequently found on the tops of hills or benches and along slopes at 4,900-5,500 feet. Known from San Juan County from the Colorado border south to near Naschitti. (McDonald, 1999b; Roth, 2001b)	No appropriate habitat: there is salt desert scrub in the project area; however, the access road is too sparsely vegetated and heavily graveled and cobbled, or too sandy. The mesa top is a transitional community and the soil is too sandy. The area is in the Menefee formation, with no nearby Mancos or Fruitland shale. The project area is slightly to well above the known elevational range of the species. (NP)

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Potential to Occur** K – Known, documented observation within project area.
S – Habitat suitable and species suspected to occur within the project area.
NS – Habitat suitable but species is not suspected to occur within the project area.
NP – Habitat not present and species unlikely to occur within the project area

Mesa Verde cactus is a small, usually solitary cactus. It is oval to depressed globose in shape and usually 3 to 11 cm tall and 4 to 8 cm in diameter. Central spines are generally absent. The flowers are yellowish-cream to pinkish and appear from early-April to early-May. This plant grows in sparsely vegetated shale or adobe clay badlands typically in the Fruitland and Mancos Shale formations, but has also been found to growing in the Menefee formation overlaying Mancos shale. It is commonly associated with mat saltbush (*Atriplex corrugata*), shadscale (*Atriplex confertifolia*), frankenia (*Frankenia jamesii*), and starvation prickly pear (*Opuntia polyacantha*) at elevations of 4900 to 5500 feet. (Roth, 2001b; McDonald, 1999b)

Parish's alkali grass is a short-lived winter or spring annual grass that is easily distinguished from its perennial relatives. It grows in alkaline springs, seeps, and seasonally wet areas, from elevations of 5000 to 7200 feet. The species requires continuously damp soils during its late winter to spring growing period. (McDonald, 1999a) On Navajo lands, it flowers from late April to early June. (Roth, 2001a) Sufficient alkalinity for the species is indicated by a white alkaline crust along the edges of its habitat when wet and covering the area when dry. (Detsoi, 2009; personal observation).

4.4 NOXIOUS AND INVASIVE WEEDS

The Bureau of Indian Affairs lists three species of noxious weeds as potential invaders and fourteen species as new invaders on the Navajo Reservation (USDI, OSM, 1999). Of these, only halogeton (*Halogeton glomeratus*) is present. It was documented as scattered plants along the access road in the residential area at the start of the project site and also several feet east of the road's turn south to the mesa and west of that turn. Halogeton is a Priority B species, indicating that is known to have invaded isolated locales on the reservation. Emphasis is placed on immediate control, prevention of seed spread, and eradication. Education, awareness, identification, control, and monitoring are the priorities (USDI, OSM, 1999).

5.0 EFFECTS OF THE PROPOSED ACTION

5.1 INDIRECT/DIRECT EFFECTS

The proposed action will remove soil, grasses, and some shrubs.

5.2 CUMULATIVE EFFECTS

The project area is surrounded by paved and unpaved roads, power lines, residences, corrals, and tribal lands. Construction activity may increase ambient noise level, erosion, and air pollution in the immediate area.

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6.0 CONCLUSIONS

It is anticipated that the proposed action will have no impact on threatened, endangered, and special status species. As mentioned previously, the site is previously disturbed and does not appear to provide suitable habitat for many native plant and wildlife species.

Thirteen (13) listed or special status wildlife species are known to inhabit, or have the potential to occur, in San Juan County, New Mexico. None of these species were observed during the survey. Because of the existing on-site disturbance and the project area's lack of suitable habitat for many species, it is unlikely that implementation of the project will result in impact to local animal populations and their associated habitats.

7.0 RECOMMENDATIONS

In order to comply with the Migratory Bird Treaty Act (1918), it is recommended that construction take place outside of the primary nesting season (approximately April through July), if nests are present. Five (5) avian species observed during the surveys are protected under the Act. The act protects migratory birds from "take", which is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities". A "take" does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. No take of migratory birds is anticipated from the proposed project.

The proposed project will not impact Mesa Verde cactus or Parish's alkali grass, two Navajo Natural Heritage Program Species of Concern with the potential to occur in the project area.

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8.0 REFERENCES

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9.0 APPENDICES

Appendix A - Site Map
Appendix B - Site Photos
Appendix C - Wildlife species documented at project site
Appendix D - Plant species documented at project site

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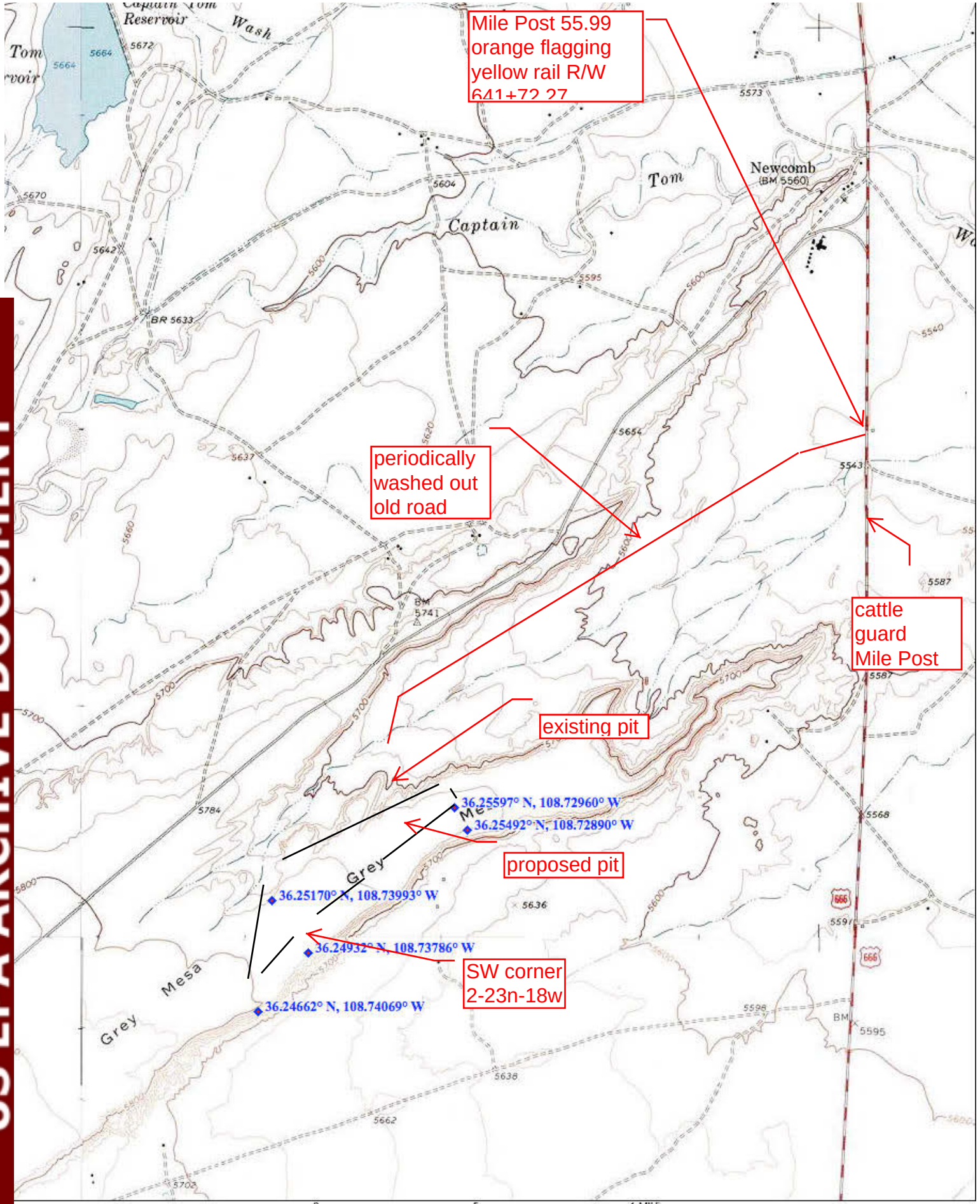

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Figure 1. Looking southeast from existing gravel pit (San Juan County, NM).

Figure 2. Habitat around existing road – looking northeast (San Juan County, NM).

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WILDLIFE SPECIES DOCUMENTED AT THE PROPOSED GREY MESA GRAVEL PIT EXPANSION SITE AND ACCESS ROAD

(NE/4 of Section 10, SE/4 of Section 3,
and SW/4, NW/4, and NE/4 of Section 2 (T. 23 N., R. 18 W.) and
SE/4 of Section 35 and SW/4 and NE/4 of Section 36 (T. 24 N., R. 18 W.)

Avian species:
Turkey vulture (*Cathartes aura*)
Common raven (*Corvus corax*)*
Western bluebird (*Sialia mexicana*)
Horned lark (*Eremophila alpestris*)
Canyon wren (*Catherpes mexicanus*)*

Mammalian species:
Desert cottontail (*Sylvilagus audubonii*)
Red fox (*Vulpes fulvus*)*

*breeding documented on site

APPENDIX 4

PLANT SPECIES DOCUMENTED AT THE PROPOSED GREY MESA GRAVEL PIT EXPANSION SITE AND ACCESS ROAD

Scientific and common names according to Allred, 2007. Identifications based on Ivey 2003 and Weber and Wittman 2001.

Shrubs and Subshrubs

Artemisia bigelovii	Bigelow's sagebrush
Atriplex canescens	Four-wing saltbush
Atriplex gardneri var. *cuneata*	Valley saltbush
Atriplex confertifolia	Shadscale
Gutierrezia sarothrae	Broom snakeweed
Krascheninnikovia lanata	Winterfat
Lycium pallidum	Pale wolfberry

Cacti

Opuntia polyacantha	*Starvation prickly pear*

Grasses

Achnatherum hymenoides	Indian ricegrass
Aristida purpurea	Purple threeawn
Bouteloua curtipendula	Sideoats grama
Bromus tectorum	Cheatgrass
Munroa squarrosa	False buffalo-grass
Pleuraphis jamesii	Galleta
Scleropogon brevifolius	Burrograss
Sporobolus airoides	Alkali sacaton
Sporobolus cryptandrus	Sand dropseed

Forbs

Ambrosia acanthicarpa	Bur ragweed
Chaetopappa ericoides	Sand aster
Chamaesaracha coronopus	Green-leaf five-eyes
Chamaesyce sp.	Spurge
Chenopodium album	Lamb's quarter
Chenopodium leptophyllum	Narrowleaf goosefoot
Cryptantha crassisepala var. *crassisepala*	Thick-sepal cat's-eye
Cymopterus sp.	Spring-parsley
Dieteria sp.	Spine-aster

APPENDIX 4

Halogeton glomeratus	Halogeton
Machaeranthera tanacetifolia	Tahoka daisy
Mentzelia multiflora	Adonis blazingstar
Platyschkuhria integrifolia var. *oblongifolia*	Basin-daisy
Salsola tragus	Russian-thistle
Senecio sp.	Groundsel
Sphaeralcea coccinea	Scarlet globemallow
Sphaeralcea fendleri	Fendler's globemallow
Sphaeralcea grossulariifolia	Gooseberry globemallow
Stephanomeria exigua	Twiggy wire-lettuce
Verbesina encelioides	Golden crownbea

APPENDIX 4

ARCHAEOLOGICAL INVENTORY REPORT DOCUMENTATION PAGE (HPD JAN/91)

1. HPD REPORT NO. 2. (FOR HPD USE ONLY) 3. RECIPIENTS ACCESSION NO.

4. TITLE OF REPORT: Cultural Resource Inventory Recon Oil Company's Grey Mesa Pit and Haul Road Near Newcomb, Navajo Nation Lands, San Juan County, New Mexico .

5. FIELDWORK DATES
June 5 and 6, 2009

Author(s): Laurens C. Hammack

6. REPORT DATE:
June 15, 2009

7. CONSULTANT NAME AND ADDRESS:
Gen'l Charge: Laurens C. Hammack
Org. Name; Complete Archaeological Service Associates
Org. Address P.O. Box 1777
Cortez CO 81321
Phone: (970) 565-9229

8. PERMIT NO.
B09256

9. CONSULTANT REPORT NO.
CASA 09-50

10. SPONSOR NAME AND ADDRESS:
Ind. Responsible: Brian Wood, Permits West agent for Recon Oil Company, Inc
Org. Address: 37 Verano Loop, Santa Fe, NM 87508
Phone: (505) 466 8120

11. SPONSOR PROJECT NO.

12. AREA OF EFFECT: 91.03 ac
AREA SURVEYED: 107.95 ac

13. LOCATION (MAP ATTACHED):
a. Chapter: Newcomb
b. Agency: Shiprock
c. County: San Juan
d. State: New Mexico
e. Land Status: Navajo Tribal Trust
f. UTM Center: Zone 12 (see continuation sheet)
g. Area: Section 2, 3, and 10.T23N, R18W and Section 35 and 36,T24N, R18W , San Juan County, New Mexico (see continuation sheet)
h. 7.5' Map Name(s): Newcomb N.Mex 1966
Sheep Springs, N.Mex.-1966

14. REPORT /X/ OR SUMMARY (REPORT ATTACHED) // OR PRELIMINARY REPORT //
a. Description of Undertaking:The project consists of the expansion of an existing gravel pit on Grey Mesa and refurbishing the existing haul road from US 491 to the pit area. A total of 83.75 acres was surveyed in the proposed pit expansion area and a 100-ft wide (24.20 acres) corridor was inventoried for the 30-ft wide (7.28 acres) haul road for a distance of 2 miles.
b. Existing Data Review: HPD on 6/3/09 with two sites previously recorded within a 500-ft radius of the proposed pit and haul road and three previous inventories in the immediate vicinity (see continuation sheet for details)
c. Area Environmental & Cultural Setting: The proposed pit is located on Grey Mesa, a relatively narrow, flat topped mesa separating two tributaries of Capt Tom Wash. At an elevation of 5780±10-ft, a desert scrub vegetation of shadscale, and grasses growing in a gravelly sand is present. The proposed pit borders the previously utilized pit areas to the south. The access road begins at right-of-way fence the current alignment of US 491 and proceeds westerly over washed and eroded colluvial sands on the partially washed-out existing haul road which parallels a wash channel. The terrain is barren and relatively level with small areas of sandstone outcrops present. Shadscale and grasses with some russian thistle comprise the vegetation. For data on Cultural Setting, see continuation sheet.
d. Field Methods: Two persons walking parallel transects spaced at 15 meters apart along the haul road. Three persons walking parallel transects across the proposed pit area spaced no greater than 15 meters apart

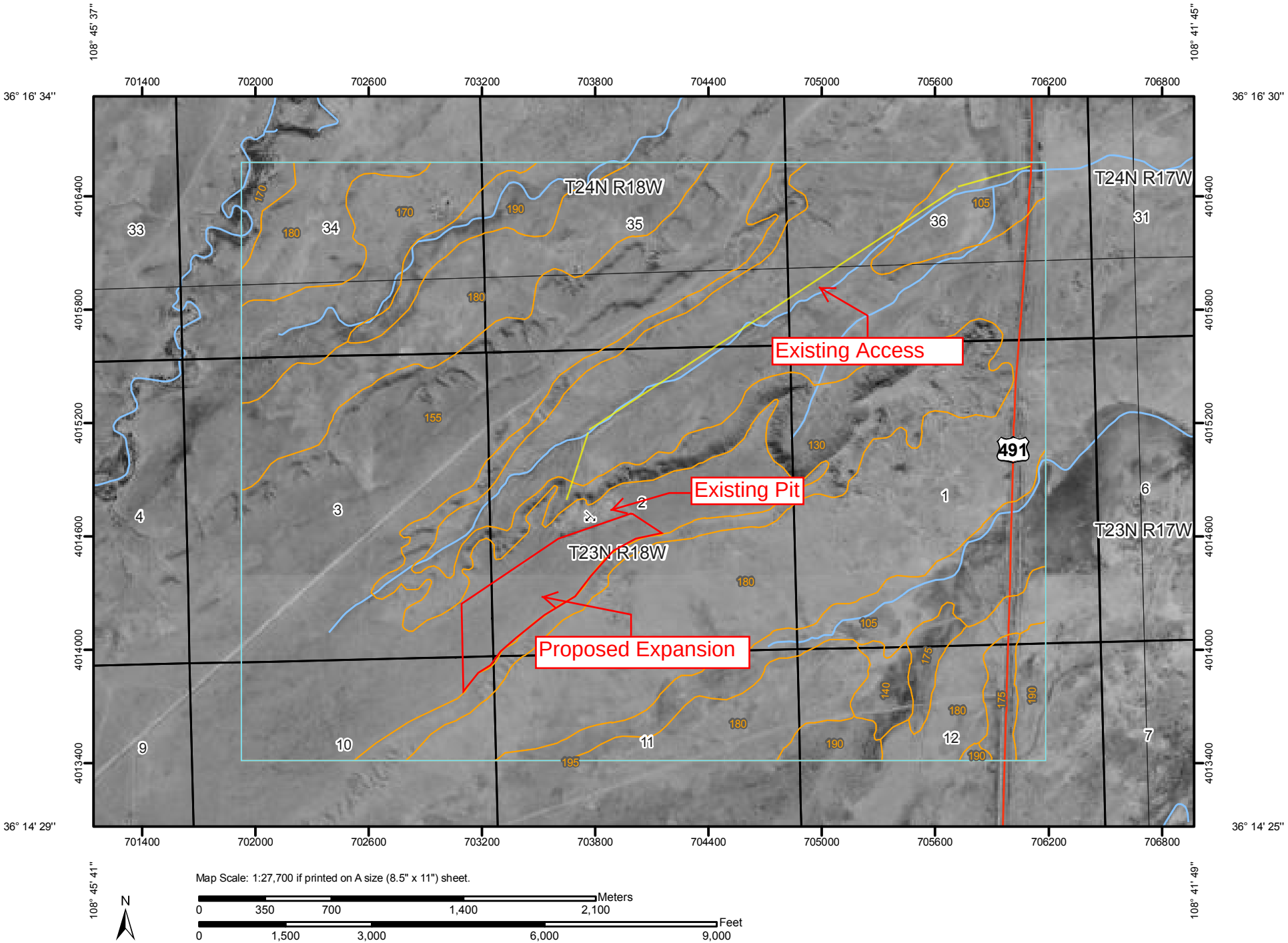
15. CULTURAL RESOURCE FINDINGS:

a. Location/Identification of Each Resource: Three previously recorded sites (see continuation sheet for details)
b. Evaluation of Significance of Each Resource (above): See continuation sheet for details

16. MANAGEMENT SUMMARY (RECOMMENDATIONS): All of the sites are located along the existing haul road. With the stipulation that no widening of the existing haul road be undertaken in the vicinity of the sites, a determination of "no historic properties affected" for the project areas at the locations described in this report.

17. CERTIFICATION: SIGNATURE: _____ DATE:6/15/09
General Charge Name: Laurens C. Hammack
SIGNATURE: _____ DATE:6/15/09
Direct Charge Name: Laurens C. Hammack

APPENDIX 5


108° 45' 37"
108° 41' 45"
36° 16' 34"
36° 16' 30"
701400
702000
702600
703200
703800
704400
705000
705600
706200
706800
4016400
4015800
4015200
4014600
4014000
4013400
36° 14' 29"
36° 14' 25"
108° 45' 41"
108° 41' 49"
T24N R18W
T24N R17W
T23N R18W
T23N R17W
Existing Access
Existing Pit
Proposed Expansion
491
33
34
35
36
31
4
3
2
1
6
9
10
11
12
7
170
180
190
105
155
130
175
140
195
Map Scale: 1:27,700 if printed on A size (8.5" x 11") sheet.
N
Meters
0
350
700
1,400
2,100
Feet
0
1,500
3,000
6,000
9,000

APPENDIX 6

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities
- PLSS Township and Range
- PLSS Section

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:27,700 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 12N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona
Survey Area Data: Version 9, Dec 9, 2008

Date(s) aerial images were photographed: 10/9/1997

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona (NM717)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
105	Hamburn clay loam, 0 to 1 percent slopes	233.4	7.0%
130	Badland-Genats complex, 35 to 60 percent slopes	350.1	10.5%
140	Benally loamy sand, 1 to 3 percent slopes, overblown	27.7	0.8%
155	Mesa fine sandy loam, 1 to 4 percent slopes	865.4	26.0%
170	Notal sandy clay loam, 0 to 1 percent slopes	163.8	4.9%
175	Suwanee loam, 0 to 1 percent slopes	49.1	1.5%
180	Kimbeto-Huerfano complex, 1 to 4 percent slopes	1,514.5	45.5%
190	Jeddito loamy fine sand, 0 to 2 percent slopes	125.6	3.8%
195	Tewa fine sandy loam, 2 to 15 percent slopes	0.0	0.0%
Totals for Area of Interest		**3,329.5**	**100.0%**

Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona

105—Hamburn clay loam, 0 to 1 percent slopes

Map Unit Setting

Elevation: 5,200 to 6,000 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 140 to 160 days

Map Unit Composition

Hamburn and similar soils: 80 percent

Description of Hamburn

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone and shale

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Very slightly saline to strongly saline (4.0 to 25.0 mmhos/cm)
Sodium adsorption ratio, maximum: 45.0
Available water capacity: Low (about 5.1 inches)

Interpretive groups

Land capability (nonirrigated): 6s
Ecological site: Saline Bottom 6-10" (R035XB024NM)

Typical profile

0 to 3 inches: Clay loam
3 to 9 inches: Sandy clay loam
9 to 24 inches: Sandy clay loam

24 to 70 inches: Clay loam

Data Source Information

Soil Survey Area: Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona
Survey Area Data: Version 9, Dec 9, 2008

Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona

130—Badland-Genats complex, 35 to 60 percent slopes

Map Unit Setting

Elevation: 5,300 to 6,000 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 140 to 160 days

Map Unit Composition

Badland: 40 percent
Genats and similar soils: 35 percent

Description of Badland

Setting

Landform: Breaks
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex

Properties and qualities

Slope: 8 to 10 percent
Depth to restrictive feature: 0 to 3 inches to paralithic bedrock
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)

Interpretive groups

Land capability (nonirrigated): 8s

Typical profile

0 to 60 inches: Bedrock

Description of Genats

Setting

Landform: Escarpments, cuestas
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Slope alluvium over residuum weathered from shale

Properties and qualities

Slope: 35 to 60 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent

Gypsum, maximum content: 5 percent
Maximum salinity: Slightly saline to moderately saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum: 30.0
Available water capacity: Very low (about 2.7 inches)

Interpretive groups

Land capability (nonirrigated): 7e
Ecological site: Shale Hills 6-10" p.z. Sodic (R035XB268AZ)

Typical profile

0 to 3 inches: Channery silt loam
3 to 9 inches: Silty clay loam
9 to 22 inches: Silty clay
22 to 26 inches: Bedrock

Data Source Information

Soil Survey Area: Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona
Survey Area Data: Version 9, Dec 9, 2008

Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona

155—Mesa fine sandy loam, 1 to 4 percent slopes

Map Unit Setting

Elevation: 5,700 to 6,300 feet
Mean annual precipitation: 5 to 8 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 140 to 160 days

Map Unit Composition

Mesa and similar soils: 85 percent

Description of Mesa

Setting

Landform: Stream terraces, fan remnants
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex
Across-slope shape: Linear, convex
Parent material: Fan alluvium derived from sandstone and shale

Properties and qualities

Slope: 1 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water capacity: Moderate (about 6.9 inches)

Interpretive groups

Land capability (nonirrigated): 7c
Ecological site: Loamy Upland 7-10" (R035XB021NM)

Typical profile

0 to 2 inches: Fine sandy loam
2 to 21 inches: Sandy clay loam
21 to 37 inches: Very cobbly sandy loam
37 to 47 inches: Very gravelly sandy loam

47 to 63 inches: Clay loam

Data Source Information

Soil Survey Area: Shiprock Area, Parts of San Juan County, New Mexico and Apache County, Arizona
Survey Area Data: Version 9, Dec 9, 2008

2015 Environmental Assessment

PERMITS WEST, INC.
PROVIDING PERMITS for LAND USERS
37 Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

UPDATED
BIOLOGICAL EVALUATION
FOR RECON OIL'S PROPOSED GREY MESA GRAVEL PIT EXPANSION AND ACCESS ROAD
SAN JUAN COUNTY, NEW MEXICO

PREPARED FOR:

RECON OIL COMPANY
920 E. HIGHWAY 66
GALLUP, NM 87301

MAY 31, 2015

SUMMARY

Recon Oil Company (Recon) is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Sections 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. The location of the proposed Grey Mesa gravel pit is approximately three miles southwest of the town of Newcomb.

No threatened, endangered, or special status species were observed within or adjacent to the project area during the wildlife and botanical surveys conducted on June 08, 09, and 19, 2009.

A recent request for application for a General Air Quality Permit for a New or Modified Minor Source Stone Quarrying, Crushing and Screening Facilities in Indian Country requires that a Biological Evaluation be completed to address updated information on the potential effects of threatened, endangered, and special status species recognized by the U.S. Endangered Species Act, and the Navajo Nation Fish and Wildlife Endangered Species List.

1.0 BACKGROUND/HISTORY

The Grey Mesa Gravel Pit was proposed in 2009 (Proposed Action). An Environmental Assessment was prepared and a Finding of No Significant Impact (FONSI) [Appendix A] was issued by the Bureau of Indian Affairs Division of Environmental, Cultural, and Safety Management, Navajo Regional Office March 18, 2010 [EA-09-236]. A recent request by Recon Oil Company (Recon) for an Environmental Protection Agency General Air Quality Permit for New or Modified Minor Source Stone Quarrying, Crushing and Screening Facilities in Indian Country requires that the project area be cleared for U.S. Endangered Species Act (ESA) listed threatened or endangered species prior to issuance of coverage under a General Permit. Most of these species have been addressed in prior documents relating to the original Proposed Action, including the *Biological Assessment for Recon Oil's Proposed Grey Mesa Gravel Pit Expansion and Access Road* dated July 1, 2009 (Appendix B).

The purpose of this Biological Evaluation (BE) is to address currently listed ESA species for the purposes of meeting the EPA requirements for obtaining a General Air Quality Permit for crushing and screening facilities proposed at the Grey Mesa Gravel Pit. Within this BE, determinations will be made on potential impacts to currently listed threatened and endangered species (USFWS, 2015) [Appendix C]. Concurrence with these determinations by EPA will enable Recon to obtain the necessary air quality permits to proceed with the Proposed Action.

2.0 PROJECT DESCRIPTION

Recon is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing abandoned gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Section 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. The proposed gravel pit expansion is in the NE/4 of Section 10, the SE/4 of Section 3, and the NE/4 of Section 2 (T. 23 N., R. 18 W.). The northern boundary is along an existing two-track road, with the existing abandoned gravel pit on the north side of the road at the east end. The eastern boundary is along an existing two-track road. The southern boundary is along the south edge of Grey Mesa. The western boundary is across undisturbed land [Figure 1].

The access road is in the SW/4, NW/4, and NE/4 of Section 2 (T. 23 N., R. 18 W.) and the SE/4 of Section 35 and SW/4 and NE/4 of Section 36 (T. 24 N., R. 18 W.). It begins on the west side of US Highway 491 in the NE/4 of Section 36 (T. 24 N., R. 18 W.) and heads west around the north side of a residential area. It continues southwest and then south to end at the proposed gravel pit expansion in the SW/4 of Section 2 (T. 23 N., R. 18 W.).

Photo 1: Proposed Grey Mesa Gravel Pit

The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. It is roughly ½ - three miles southwest of the town of Newcomb (Figure 1).

3.0 METHODOLOGY

The original Biological Assessment addressing listed species, as well as general wildlife and plants that occur at the site was prepared in June 2009 (Appendix B). Since that report was prepared, additional species recognized by the USFWS have become listed, thus requiring this additional Biological Evaluation. After a review of existing conditions at the project site and an evaluation of required habitats of the additional ESA listed species potentially impacted by the proposed Grey Mesa Gravel Pit, it has been determined that no further field surveys are required to provide a determination for any ESA listed species. The ESA listed species with potential to occur in the project area are based on results from U.S. Fish and Wildlife's Information Planning and Conservation website and will be evaluated for potential impacts from the Proposed Action in Section 6.2 [USFWS, 2015](Appendix C).

4.0 HABITAT CONDITIONS OF PROPOSED ACTION AND ACTION AREA

In the 2009 BE, the Proposed Action analysis area included the boundaries of the existing pit and expansion area and the access road, as well as 0.5 mile Action Area beyond these construction areas. The Action Area is included so as to evaluate impacts such as dust, noise, activity, and other factors that would impact the environment beyond the physical boundaries of the project area.

Habitat at the existing pit consists of relatively barren, arid landscape with patchy vegetation and $\geq$ 75% bare ground in some areas. The site is previously disturbed from gravel pit activities, which took place approximately twenty-five years ago, and grazing. Soils are gravelly and heavily eroded (Photo 1). The abandoned gravel pit is located in a shallow, level wash with drainage to the southwest. What sparse vegetation exists at the site shows signs of moderate to heavy grazing from domestic livestock. There are no perennial streams or wetlands within the project area or Action Area.

Photo 2: Access and Action Area habitat northeast of the Proposed Grey Mesa Gravel Pit

The access road is located in the shallow basin adjacent to Grey Mesa and begins on the west side of US 491. The road then travels south-southwest, climbing up the mesa side to the north side of the gravel pit expansion. Existing habitat at the access road consists of barren, sandy gravel surfaces with sparse vegetation (Photo 2). Vegetation is sparse along the access route and is predominated by salt desert scrub with species such as shadscale (*Atriplex confertifolia*) and alkali sacaton (*Sporobolus airoides*).

The pit expansion site is located on the top of Grey Mesa. The dominant plants are shadscale and alkali sacaton with areas of galleta (*Pleuraphis jamesii*). Winterfat (*Krascheninnikovia lanata*) is common in the west third of the area. Russian-thistle (*Salsola tragus*) and false buffalo-grass (*Munroa squarrosa*) are scattered throughout and are occasionally dominant. The plant community along the rocky rim of the southern boundary of the project area is dominated by purple three-awn (*Aristida purpurea*).

The soil is predominantly sandy clay loam with gravel and cobbles in the basin, with areas of clay loam and loamy sand. The mesa top is mostly sandy loam with a heavy gravel content. The soils are derived from the underlying Menefee formation (NMBGMR, 2003). Elevation throughout the project area ranges from approximately 5540 to 5800 feet.

There are several residences along the southeast edge of the site, near the beginning of the access road, as well as a horse corral at the south edge. Grazing livestock regularly use the project area and Action Area. With the exception of the mesa sides and some grassland habitat, there are few habitat features of wildlife value in the general area. Although there is a small drainage lined with several small salt cedar (*Tamarix sp.*) in the basin formed by the abandoned gravel pit, there are no wetlands, perennial flows, or other apparent water sources. The overall site is moderately to heavily disturbed from previous gravel pit activities, grazing, and human activities such as refuse dumping.

5.0 THREATENED, ENDANGERED, AND SPECIAL STATUS SPECIES

5.1 WILDLIFE

No threatened, endangered, or special status wildlife species or critical habitats were documented within or adjacent to the project area during the 2009 wildlife surveys (Appendix B).

The following Table 1 summarizes current ESA listed wildlife species and Navajo Department of Fish and Wildlife Natural Heritage Program NNDFW-NNHP wildlife species with potential to occur in the Action Area and their status.

Table 1. Listed Wildlife Species with Potential Occurrence near the Proposed Grey Mesa Gravel Pit

Common Name (*scientific name*)	**Federal Status**	**Navajo Nation Status**	**Habitat Associations**	***Potential to Occur in Project Area**
MAMMALS				
Canada Lynx (*Lynx rufus*)	T	n/a	High elevation conifer forests and mountainous areas.	NP
Banner-tailed kangaroo rat (*Dipodomys spectabilis*)	n/a	Group 4	Lowland desert grasslands, sand dunes.	NP
Black-footed ferret (*Mustela nigripes*)	E	Group 2	Open grasslands with large established prairie dog colonies.	NP
Kit fox (*Vulpes macrotis*)	n/a	Group 4	Open, arid lowland habitats.	NP
Pronghorn (*Antilocapra americana*)	n/a	Group 3	Grasslands, brushlands, bunch-grass and sagebrush areas of open plains and deserts.	NP
BIRDS				
Golden eagle (*Aquila chrysaetos*)	EPA	Group 3	A wide variety of open habitats, typically nests in steep cliffs > 30 meters in height.	NP
Ferruginous hawk (*Buteo regalis*)	n/a	Group 3	Open grasslands and deserts, typically nests atop rocky pinnacles, small buttes and cliffs	NP
Mountain plover (*Charadrius montanus*)	n/a	Group 4	Seeks dry, disturbed, or intensively grazed, open, flat tablelands. Bare ground, short vegetation, and flat topography are indicators of	NP

			ideal habitat.	
Western burrowing owl (*Athene cunicularia hypugaea*)	n/a		Grasslands and basin-prairie shrub, normally associated with prairie dog towns.	NP
Yellow-billed cuckoo (*Coccyzus americanus*)	T	Group 2	Dense riparian thickets and woodlands, orchards, and woodlots.	NP
Southwestern willow flycatcher (*Empidonax trailii extimus)*	E	Group 2	Dense cottonwood-willow or tamarisk-Russian olive habitats along streams and rivers, wetlands and marshes	NP
Sprague's pipit (*Ammodramus bairdii*)	C	n/a	Dry open grasslands with native grass species of intermediate height an thickness.	NP
HERPETOFAUNA				
Northern leopard frog (*Rana pipiens*)	n/a	Group 2	Breeds in wetlands with aquatic vegetation. Found in irrigation ditches, small streams, rivers. Known from Newcomb, NM	NP
FISH				
Razorback sucker (*Xyrauchen texanus*)	E	Group 2	Rivers with deep runs, eddies, backwaters, and flooded off-channels	NP
Zuni bluehead sucker (*Catostomus discobolus yarrow*)	E	n/a	Slow meandering streams with sandy beds and emergent quactic vegetation.	NP
Colorado pikeminnow (*Ptychocheilus Lucius*)	E	Group 2	Medium to large rivers with eddies and backwaters	NP

Status
ESA**:** E –Endangered T -Threatened C –Candidate
EPA: Bald and Golden Eagle Protection Act
NESL = Navajo Endangered Species List (G1 species – no longer occurs on Navajo Nation lands; G2 and G3 species – "endangered"; G4 species – "species of concern".

*Potential to Occur
K -Known, documented observation within project area.
S -Habitat suitable and species suspected to occur within the project area.
NS -Habitat suitable but species is not suspected to occur within the project area.
NP- Habitat not present and species unlikely to occur within the project area.

5.2 Eagle Protection Act and Migratory Bird Treaty Act

Bald eagles and golden eagles are protected by the Bald and Golden Eagle Protection Act (16 USC 668-668c) enacted in 1940 which prohibits "taking" of any eagle (bald or golden). Though the bald eagle (*Haliaeetus leucocephalus*) is no longer listed under the ESA it is still protected through this Act.

All migratory birds are protected under the Migratory Bird Treaty Act of 1918 as amended (MBTA)[16 USC §703-712]. Birds protected include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows, and others, including their body parts (feathers, plumes etc.), nests, and eggs. The MBTA protects migratory birds from a "take". Take is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities". A "take" does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof.

The overall project area is relatively denuded and there is additional disturbance from close proximity to local roads, a highway, and homes. Five (5) avian species documented during the wildlife surveys are protected under the Migratory Bird Treaty Act; turkey vulture (*Cathartes aura*), common raven (*Corvus corax*), western bluebird (*Sialia mexicana*), horned lark (*Eremophila alpestris*), and canyon wren (*Catherpes mexicanus*).

5.3 PLANTS

No threatened, endangered, or special status plant species or critical habitats were documented within or adjacent to the project area during the 2009 plant surveys (Appendix B).

The following Table 2 summarizes current ESA listed plant species and NNDFW-NNHP listed plant species with potential to occur in the Action Area and their status.

Table 2. Listed Plant Species with Potential Occurrence near the Proposed Grey Mesa Gravel Pit.

Species	Federal Status	Navajo Nation Status	Habitat Associations	*Potential to Occur in Project Area
Knowlton's cactus (*Pediocactus knowltonii*)	E	n/a	On rolling, gravelly hills in a piñon-juniper-sagebrush community at about 6,200-6,300 ft. This species is known only from the type locality very near the NM/CO border. Flowers April and May.	NP
Mancos milk-vetch (*Astragalus*	E	Group 2	Cracks or eroded depressions on or near sandstone rimrock	NP

humillimus)			ledges and mesa tops in Point Lookout and Cliffhouse Sandstone. Elev. 5000-6000 ft. Blooms late April to early May.	
Mesa Verde cactus (*Sclerocactus mesae-verdae*)	T	Group 2	Sparsely vegetated salt desert scrub communities on low rolling clay hills formed from the Mancos or Fruitland Shale formations, occasionally on Menefee overlaying Mancos formation. It is most frequently found on the tops of hills or benches and along slopes at 4,900-5,500 feet. Known from San Juan County from the Colorado border south to near Naschitti.	NP
Parish's alkali grass (Puccinellia parishii)	n/a	Group 4	Alkaline springs, seeps, or seasonally wet areas such as washes at 5000-7200 feet. The species requires continuously damp soils during its late winter to spring growing period.	NP

Status
ESA**:** E -EndangeredT -Threatened C -Candidate
NESL species = Navajo Endangered Species List (G1 species – no longer occurs on Navajo Nation lands; G2 and G3 species – "endangered"; G4 species – "species of concern".

*Potential to Occur
K -Known, documented observation within project area.
S -Habitat suitable and species suspected to occur within the project area.
NS -Habitat suitable but species is not suspected to occur within the project area.
NP- Habitat not present and species unlikely to occur within the project area.

6.0 EFFECTS OF THE PROPOSED ACTION

6.1 GENERAL WILDLIFE AND PLANTS

Effects of the Grey Mesa Gravel Pit on the environment, including wildlife and plants have been addressed and analyzed in the *Environmental Assessment for Recon Oil Corporation, Inc., Proposed Grey Mesa Gravel Pit and Access Road (EA-09-236)* dated July 19, 2009. Additional analysis and mitigation has been provided in *Recon Oil Co., Inc. Grey Mesa Gravel Pit Mining, Production, and Reclamation Plan* dated October 12, 2009. Within these documents, mitigation strategies are outlined that would provide protection for general wildlife and restore habitat and

resources for wildlife. These strategies include:

1. No blasting or drilling
2. Applying magnesium chloride or similar dust supressor to control dust.
3. Stockpiling topsoil for later use in reclamation
4. Leaving slopes no steeper than 5:1
5. Using Best Management Practices to control rilling and erosional deposition within and outside the pit according to the EPA approved Stormwater Pollution Prevention Plan.
6. Reseeding and monitoring seedling success.
7. Following speed limits along access roads.
8. Properly containing all hazardous materials according to EPA and Navajo EPA requirements.
9. Controlling noxious weeds.

Despite mitigation there will be a loss of habitat in the project area and there will be a disruption of wildlife breeding, foraging, and general movement patterns as a result of the Proposed Action. Individual losses to wildlife populations are anticipated as well, due to collisions with equipment and vehicular traffic and other human activities.

6.2 LISTED SPECIES

Base on habitat requirements and an analysis of the available habitat within the Proposed Action boundaries and Action Area, no listed species are expected to occur in the area and no impacts to listed species are anticipated from the Proposed Action. The following determinations are made based on the absence of available suitable habitat for listed species within the proposed Grey Mesa Gravel Pit project area:

Colorado Pikeminnow, Razorback Sucker, and Zuni Bluehead Sucker
The Colorado Pikeminnow (endangered), the razorback sucker (endangered), and the Zuni bluehead sucker (endangered) will not be impacted by the Proposed Action because there are no rivers, lakes, streams, or other water ways in which they would occur. The closest suitable habitat for these fishes is greater than 30 miles from the Proposed Action Area. Due to lack of suitable habitat for these three listed fish species at the Grey Mesa Gravel Pit site, a "no effect" determination is proposed.

Southwestern Willow Flycatcher and Yellow-billed Cuckoo
The southwestern willow flycatcher (endangered) and yellow-billed cuckoo (candidate) will not be impacted by the Proposed Action because there are no riparian corridors, wetlands, woodlots, orchards, or riparian vegetation within the Proposed Action area. The closest suitable habitat for these two species would be along the San Juan River corridor some 30 miles north of the project area. Due to lack of suitable habitat for these two bird species at the Grey Mesa Gravel Pit site, a "no effect" determination is proposed.

Sprague's Pipit
In New Mexico, the Sprague's pipit occurs in winter in southern desert grassland habitats primarily I the lower Pecos River Valley, Otero Mesa, and the Animals Valley (NMACP, 2015).

Though it has not been well surveyed in other areas of the state, it prefers grasslands supporting native species of intermediate height and density; neither of which are available at the proposed Grey Mesa Gravel Pit project area or Action Area. Habitat within the project area is highly disturbed from historic grazing resulting in a large percentage of bare ground as well as the presence of opportunistic non-native species. Due to lack of suitable habitat for Sprague's pipit at the Grey Mesa Gravel Pit, a "no effect" determination is proposed.

Canada Lynx

The Canada lynx (threatened) is a medium sized wild cat that inhabits high elevation, mountainous regions with large tracts of intact coniferous forests and long lasting snow fields. None of these habitat elements are present at the proposed Grey Mesa Gravel Pit project area. The closest suitable habitat for the Canada lynx is approximately 100 miles north northeast in the San Juan Mountains. Due to lack of suitable habitat for Canada lynx at the Grey Mesa Gravel Pit, a "no effect" determination is proposed.

Mesa Verde Cactus

Mesa Verde cactus (threatened) is a small, usually solitary cactus and flowers from early-April to early-May. This plant grows in sparsely vegetated shale or adobe clay badlands typically in the Fruitland and Mancos Shale formations, but has also been found to growing in the Menefee formation overlaying Mancos shale. It is commonly associated with mat saltbush (*Atriplex corrugata*), shadscale (*Atriplex confertifolia*), frankenia (*Frankenia jamesii*), and starvation prickly pear (*Opuntia polyacantha*) at elevations of 4900 to 5500 feet. (Roth, 2001; McDonald, 1999). Habitat at the Grey Mesa Gravel Pit is not a suitable substrate for this species. Though the area offers some salt desert scrub associations, soils are too sandy and gravelly. Additionally, the project area is above the elevation where this species is typically found (4,900-5,500 feet (McDonald, 1999; Roth, 2001). Due to lack of suitable habitat for Mesa Verde Cactus at the Grey Mesa Gravel Pit, a "no effect" determination is proposed.

Mancos Milkvetch

Mancos milkvetch (endangered) is an *Astragalus* species which blooms in late April to early May and occurs in cracks or eroded depressions on or near sandstone rimrock ledges and mesa tops in Point Lookout and Cliffhouse Sandstone at elevations of 5000-6000 feet (McDonald, 1999; Roth, 2001). Though the project area is within the elevational range for this species, there are no sandstone rimrock ledges or mesa tops and no Point Lookout or Cliffhouse Sandstone in the project area. Due to lack of suitable habitat for Mancos milkvetch at the Grey Mesa Gravel Pit, a "no effect" determination is proposed.

Knowlton Cactus

Knowlton cactus (endangered) grows on rolling, gravelly hills in a pinyon-juniper -sagebrush community with an elevational range of 6,200-6,300 feet, and is known only from a locality matching this habitat type near the NM/CO border (McDonald and Ferguson, 1999). Habitat at the Grey Mesa Gravel pit is not within a pinyon-juniper -sagebrush habitat and is below the elevation at which this species is found. Due to lack of suitable habitat for Knowlton cactus at the Grey Mesa Gravel Pit, a "no effect" determination is proposed.

Eagle Protection Act Migratory Bird Treaty Act
Bald eagles and golden eagles are protected by the Bald and Golden Eagle Protection Act (16 USC 668-668c) enacted in 1940 which prohibits "taking" of any eagle (bald or golden). Though the bald eagle (*Haliaeetus leucocephalus*) is no longer listed under the ESA it is still protected through this Act. Additionally, the golden and bald eagle are both protected under the Navajo Endangered Species List (NNDFW, 2008).

Golden eagles are known to nest within 30 miles of the Grey Mesa project area and could use the project area for foraging; however, there are no suitable structures for nesting golden eagles within 1.0 miles of the project area. Construction activities at the pit and removal of vegetation that could be used by golden eagle prey may impact local golden eagles that forage in the project area. However, due to the presence of vast areas of open grasslands and scrub that likely offer alternate hunting opportunities in this region, it is unlikely that implementation of the Proposed Action would result in a golden eagle "take".

There is no suitable nesting habitat for bald eagles in or near the project area. Bald eagles typically nest along timbered lakeshores or rivers. Therefore it is unlikely that any bald eagles would be impacted by the Proposed Action.

Migratory Bird Treaty Act
All migratory birds are protected under the Migratory Bird Treaty Act of 1918 as amended (MBTA)[16 USC §703-712]. Birds protected include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows, and others, including their body parts (feathers, plumes etc.), nests, and eggs. The MBTA protects migratory birds from a "take". Take is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities". A "take" does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof.

Five (5) avian species documented during the 2009 wildlife surveys are protected under the Migratory Bird Treaty Act; turkey vulture (*Cathartes aura*), common raven (*Corvus corax*), western bluebird (*Sialia mexicana*), horned lark (*Eremophila alpestris*), and canyon wren (*Catherpes mexicanus*).

The overall project area is relatively denuded and there is additional disturbance from close proximity to local roads, a highway, and homes resulting in the project area offering little in the way of preferred migratory bird nesting habitat. However, it is possible that some grassland and low nesting species can occur on the site during the breeding season. If project activities are initiated prior to or take place after the primary nesting season (March 1 –August 31), no take of migratory birds is anticipated as a result of the proposed action. If project initiation falls within the primary nesting season, a breeding bird survey is recommended within 2 weeks of construction or opening of the pit to determine the presence of any nesting birds. Active nests would need to be protected by a buffer (to be determined by qualified biologist) to avoid violation of the MBTA and possible take of a migratory bird.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Due to lack of available suitable habitat, the proposed Grey Mesa Gravel Pit should have no negative impacts on any listed or special status species.

It is recommended that the project be initiated prior to or after the primary nesting season (March 1 –August 31) to avoid take of potential nesting migratory birds. If project initiation falls within the primary nesting season, a breeding bird survey is recommended within 2 weeks of construction or opening of the pit to determine the presence of any nesting birds. Active nests would need to be protected by a buffer (to be determined by qualified biologist) to avoid violation of the MBTA and possible take of a migratory bird.

Other recommendations outlined in the *Environmental Assessment for Recon Oil Corporation, Inc., Proposed Grey Mesa Gravel Pit and Access Road (EA-09-236)* dated July 19, 2009 and the *Recon Oil Co., Inc. Grey Mesa Gravel Pit Mining, Production, and Reclamation Plan* dated October 12, 2009 should also be implemented to protect general wildlife and restore habitat and resources for wildlife.

Wildlife Biologist
Permits West, Inc.

May 31, 2015

8.0 REFERENCES

Dean, Cynthia. July 19, 2009. *Environmental Assessment (EA) for Recon Oil Co., Inc. Plan of Development Grey Mesa Gravel Pit and Access Road.* Permits West, Inc. 37 Verano Loop, Santa Fe, New Mexico 87508.

Galloway, June M. July 1, 2009. *Biological Assessment for Recon Oil's Proposed Grey Mesa Gravel Pit Expansion and Access Road, San Juan County, New Mexico.* Permits West, Inc. 37 Verano Loop, Santa Fe, New Mexico 87508.

McDonald, Charlie. 1999. Taxon report for *Astragalus humillimus* (Mancos milkvetch). in New Mexico Rare Plant Technical Council. 1999. New Mexico Rare Plants. Albuquerque, NM: New Mexico Rare Plants Home Page. http://nmrareplants.unm.edu (Latest update: 20 April 2015).

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Roth, Daniela. 2001. Species account for *Astragalus humillimus*. Navajo Natural Heritage Program. http://www.nndfw.org/nnhp/Plants/ashu.pdf. (revised 15 May 2008).

U.S. Fish and Wildlife Service Information Planning and Conservation Website (USFWS-IPAC). *My Project San Juan County, New Mexico.* Web. http://ecos.fws.gov/ipac/project/N3GSY-7RJOB-G3RHQ-L5DZT-7NKZBM/resources. Accessed May 2015.

ATTACHMENTS:

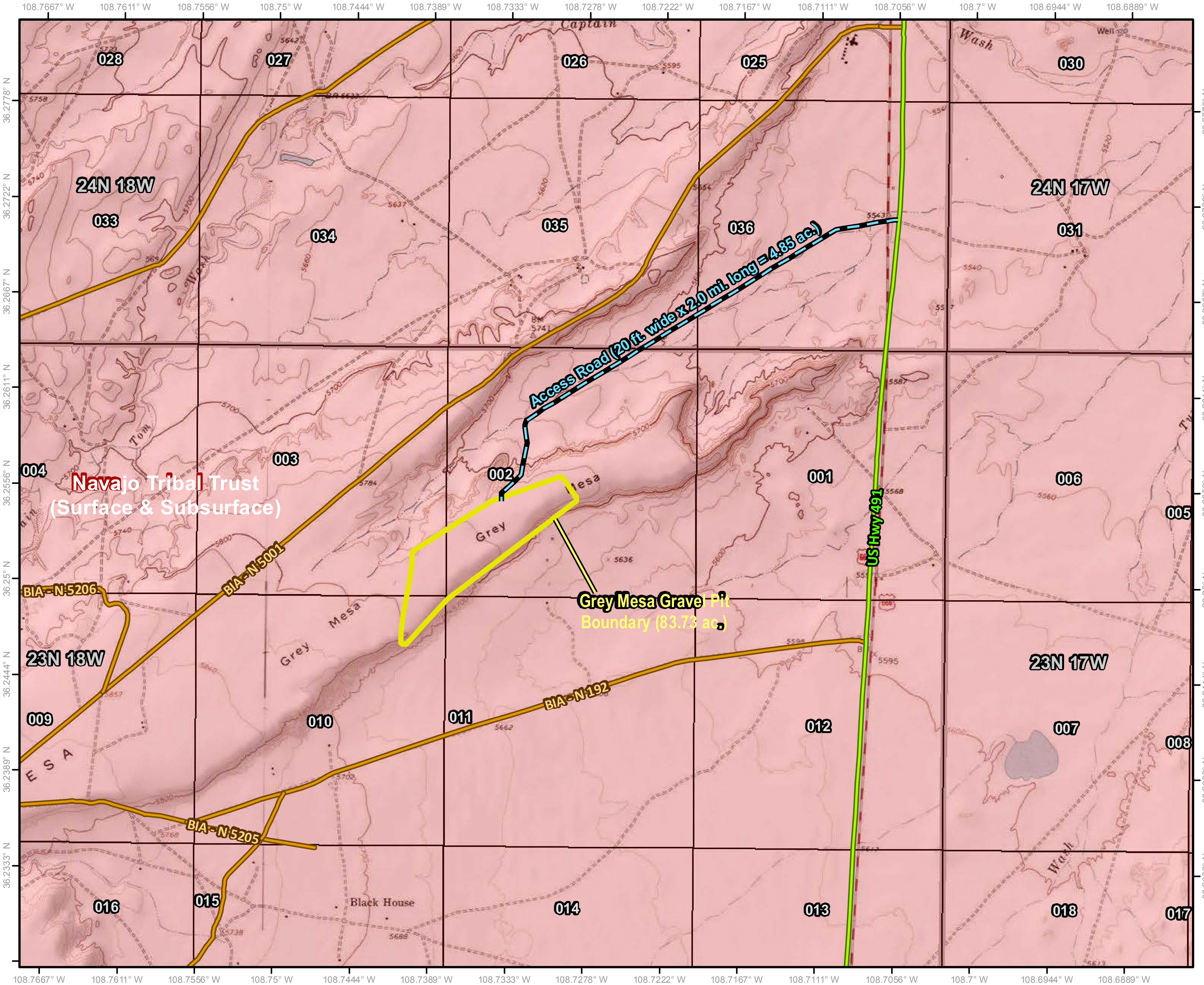
Figure 1- Site Map
Appendix A – 2010 FONSI
Appendix B – 2009 Biological Evaluation
Appendix C – USFWS IPAC List

Figure 1

RECON OIL CO., INC.

Grey Mesa Gravel Pit

Sections 2, 3, & 10, T. 23 N., R. 18 W., and Sections 35 & 36, T. 24 N., R. 18 W., San Juan County, New Mexico



- Access Road (4.85 ac.)
- U.S. Highway (NavDOT 2008)
- BIA Public Road (NavDOT 2008)
- Grey Mesa Pit Boundary (83.73 ac.)
- Navajo Tribal Trust (Surface & Subsurface)
- Section
- Township

NAD 1983 State Plane New Mexico West FIPS 3003 Feet

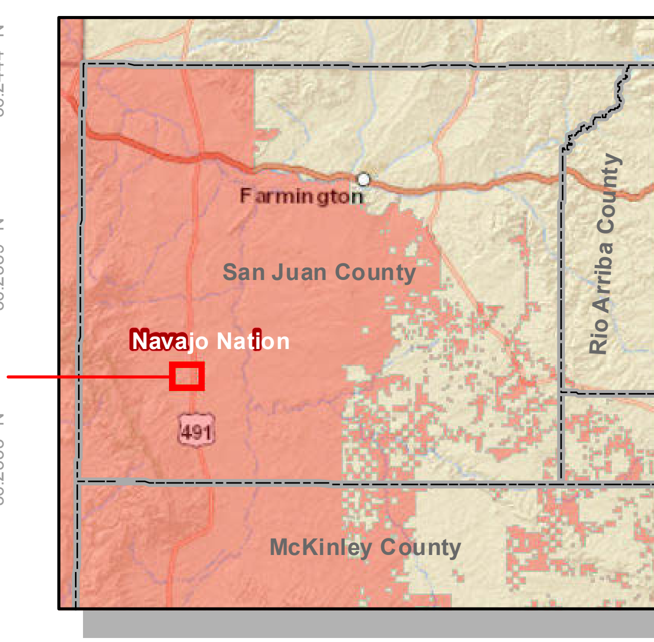
0 1,400 2,800 5,600

Feet

1:24,000

PERMITS WEST INC.

PROVIDING PERMITS for LAND USERS



United States Department of the Interior
Bureau of Indian Affairs
Navajo Region
P. O. Box 1060
Gallup, New Mexico 87305

TAKE PRIDE IN AMERICA

MC 620: Division of Environmental, Cultural & Safety Management

MEMORANDUM

MAR 18 2010

To: Regional Realty Officer
Attention: Ms. Mary Lujan

From: NEPA Coordinator */s/ Harrilene J. Yazzie*

Through: Regional Environmental Scientist */s/ George Padilla*

Subject: FONSI-Recon Oil Co., Inc Grey Mesa Gravel Pit and Access Road **EA-09-236**

The Environmental Assessment (EA), EA-09-236, for Recon Oil Corporation, Inc, proposed Grey Mesa Gravel Pit and Access Road on 88.58 acres of Navajo Tribal Trust land located roughly 0.5-3 miles southwest of Newcomb, San Juan County, New Mexico, has been reviewed in the Division of Environmental, Cultural and Safety Management, Navajo Regional Office. A Finding of No Significant Impact (FONSI) has been determined for the proposed action. It will not have a significant impact on the quality of the natural and human environment. An environmental impact statement for the proposed project is not required.

If you have questions, you may contact Ms. Harrilene J. Yazzie, Regional NEPA Coordinator, at (505) 863-8287.

Attachment

cc: **Mr. Brian Wood, Permits West, Inc. 37 Verano Loop, Santa Fe, NM 87508**

FINDING OF NO SIGNIFICANT IMPACT
ENVIRONMENTAL ASSESSMENT DOCUMENT, EA-09-236
GREY MESA GRAVEL PIT AND ACCESS ROAD

RECON OIL CORPORATION, INC

Location: Newcomb and Sheep Springs Quadrangles, USGS 7.5 Minute Series Maps
Sections 2, 3 & 10, T23N, R18W, NMPM
Sections 35 & 36, T24N, R18W, NMPM
Southwest of Newcomb, San Juan County, New Mexico

The proposed action is approval of a right-of-way (ROW) grant, by the Bureau of Indian Affairs, for gravel pit expansion and access road. The expansion for the gravel pit will be 83.73 acres and upgrade of access road will be 20-feet by 2 miles (4.85 acres). No more than 20% (≈16.6 acres) of the pit will be excavated at any one time. Upgrading will consist of rocking low water crossings and installing a cattle guard in the U.S. 491 fence at Mile Post ≈55.99. There will be no drilling or blasting. The project will affect 88.58 acres of Navajo Tribal Trust land located roughly 0.5-3 miles southwest of Newcomb, San Juan County, New Mexico. The project is sponsored by Recon Oil Corporation, Inc., 920 E. Highway 66, Gallup, New Mexico 87301.

The project environmental assessment (EA) was reviewed by the Division of Environmental, Cultural and Safety Management, Navajo Regional Office. Based on the environmental assessment and the mitigation measures specified in the document, it is determined that the proposed action will not have a significant impact on the natural and human environment. Therefore, in accordance with the National Environmental Policy Act, Section 102 (2) (C), an environmental impact statement will not be required.

The following references, incorporated in the environmental assessment, serve as the bases for this decision:

1. Agency and public involvement was solicited. Environmental issues relative to right-of-way approval for the proposed project were identified. Alternative courses of action and mitigation measures were developed in response to environmental concerns and issues.

2. The EA disclosed the environmental consequences of the proposed and "no action" alternatives.

3. In compliance with the Endangered Species Act, informal consultation was held with the Navajo Nation Department of Fish and Wildlife (NNDFW), Natural Heritage Program (NHP). Although the NNDFW has no record of species of concern occurring on or near the project site at this time, it provided a list of species of concern having the ***potential*** to occur on the *Newcomb, NM,* USGS 7.5-Minute Quadrangle containing the project boundaries (June 29, 2009). In accordance with the NNDFW Biological Resource Land Clearance Policies and Procedures (BRLCPP), the proposed project is located within a low sensitivity wildlife resources zone and therefore the NNDFW issued Biological Compliance Form (BRCF), NNDF & WL Review No. 09/21/09Q indicating **Compliance** with Tribal and Federal laws protecting biological resource (EA-Appendix 7-BRCF).

4. Potential impacts to flood plains and wetlands by the proposed project have been evaluated in accordance with Executive Orders 11988 and 11990 respectively. According to the Federal Emergency Management Agency Flood Insurance Rate Map the proposed action is not located in a floodplain. Therefore, there will be no involvement with any 100-year floodplain as a result of the construction of the proposed action (EA, Part 3.0-Table A).

5. Water Resources- surface flows are associated with small ephemeral drainage from snow melt and summer thunderstorms. Local drainage in the area is northeast off of Grey Mesa into an unnamed ephemeral wash that drains into Captain Tom Wash then on to the Chaco River. There are no springs on the sides of the mesa which could indicate shallow depth to groundwater. Potential impacts from the proposed action include: 1) increased sediment loading to the adjacent surface drainages through runoff of disturbed soils; and, 2) produced water and/or drilling fluids getting into surface or ground hydrology. Mitigation measures shall include: 1) protecting water zones and fresh water; 2) cleaning spilled contaminants quickly; and 3) reclaiming disturbed areas (EA, Parts 3.3, 3.3.1 & 3.3.2).

6. In compliance with the National Historic Preservation Act of 1966, as amended, Section 106 and 36 CFR 800.9 (b), a cultural resources inventory was conducted on the project area by Complete Archeology Service Associates (CASA). The Navajo Nation Historic Preservation Department (NNHPD) issued Cultural Resources Compliance Form (CRCF), NNHPD No. HPD-09-572 indicating, ***No historic properties will be affected if the conditions are followed that are cited within the CRCF (Appendix-5-CRCF). The operator shall comply with the effects and conditions of compliance cited in the CRCF (Appendix-5-CRCF).***

In the event of a discovery [discovery means any previously unidentified or incorrectly identified cultural resources including, but not limited to, archaeological deposits, human remains, or locations reportedly associated with Native American religious/traditional beliefs or practices] all operations in the immediate vicinity of the discovery must cease, and the Navajo Nation Historic Preservation Department must be notified.

7. RCRA, Subtitles C and D, Hazardous and Non-Hazardous Solid Waste- generation of hazardous waste is not expected. If hazardous waste is inadvertently generated, the proper authorities shall be consulted regarding disposal. Solid waste materials will be generated as a result of construction, drilling and operation of the project (EA, Part 3.5.). All trash shall be placed in a portable trash cage and hauled to an approved landfill. Trash shall not be buried or burned. Chemical toilets shall be used for human waste. The waste shall be disposed at approved dump stations (EA, Part 3.5.2).

8. Air Resources- there will be a short-term increase in dust during construction of the proposed project and there will be a local increase in combustive emissions from operating vehicles and earth moving equipment. Water shall be applied for dust control and vehicular traffic shall be limited to reduce combustive emissions and dust. Crushing and separating operations at the gravel pit will be performed by a contractor. The contractor shall be responsible for the obtaining the required permits and shall practice best management practices (EA, Parts 3.2.1 & 3.2.2).

9. Noise levels- the proposed action will be located in a relatively isolated location and is not within 400 feet of a BLM designated Noise Sensitive Area (NSA), nor is the pit located within 400 feet of any dwelling, residence, or building. There is no house located within a quarter mile of the proposed action (EA, Part 3.0-Table b).

10. Noxious Weeds- the Biological Assessment of the proposed action indicated the presences of halogeton, and invasive non-native species; however, no other invasive or non-native species were found in the project area. Noxious weeds may become established in disturbed areas within the proposed action. However, the operator shall make every effort to ensure that noxious weeds do not spread over disturbed areas (EA, Part 3.8.1, 3.8.2). If noxious weeds become established in the project area, the operator shall contact the Navajo Nation Department of Agriculture regarding management and control of noxious weeds. The NNEPA, Pesticide Enforcement and Development Program may be contacted regarding pesticide/herbicide applicators.

11. Cumulative and secondary effects on soil, water, air, noise, vegetation, cultural resources, and wildlife resources (species and habitat) were considered, and the proposed mitigation measures were found to be acceptable.

12. In accordance with Executive Order 12898 on Environmental Justice, impacts to minority and low-income populations and communities have been considered by the Regional NEPA Coordinator, as have impacts to Indian Trust Resources.

The proposed action would allow the development and production of mineral resources to meet national, regional and local energy needs.

MAR 18 2010

Regional NEPA Coordinator

Date

PERMITS WEST, INC.
PROVIDING PERMITS for LAND USERS
37 Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

BIOLOGICAL ASSESSMENT
FOR RECON OIL'S PROPOSED GREY MESA GRAVEL PIT EXPANSION AND ACCESS ROAD
SAN JUAN COUNTY, NEW MEXICO

PREPARED FOR

RECON OIL COMPANY
920 E. HIGHWAY 66
GALLUP, NM 87301

01 JULY 2009

BY JUNE M. GALLOWAY

SUMMARY

Recon Oil Company (Recon) is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing 'abandoned' gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Sections 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. It is roughly ½ - three miles southwest of the town of Newcomb.

No threatened, endangered, or special status species were observed within or adjacent to the project area during the wildlife and botanical surveys conducted on June 08, 09, and 19, 2009.

1.0 INTRODUCTION

Recon Oil Company (Recon) is proposing to expand a 25-year-old abandoned gravel pit and upgrade access to the pit in San Juan County, New Mexico. The expansion of the existing 'abandoned' gravel pit would total approximately 83.73 acres, with approximately two (2) miles of access road to be upgraded. The project area crosses Sections 35 and 36 (T. 24 N., R. 18 W.) and Section 2, 3, and 10 (T. 23 N., R. 18 W.) in USGS 7.5 minute quadrangles Newcomb and Sheep Springs. The proposed gravel pit expansion is in the NE/4 of Section 10, the SE/4 of Section 3, and the NE/4 of Section 2 (T. 23 N., R. 18 W.). The northern boundary is along an existing two-track road, with the existing abandoned gravel pit on the north side of the road at the east end. The eastern boundary is along an existing two-track road. The southern boundary is along the south edge of Grey Mesa. The western boundary is across undisturbed land.

The access road is in the SW/4, NW/4, and NE/4 of Section 2 (T. 23 N., R. 18 W.) and the SE/4 of Section 35 and SW/4 and NE/4 of Section 36 (T. 24 N., R. 18 W.). It begins on the west side of US Highway 491 in the NE/4 of Section 36 (T. 24 N., R. 18 W.) and heads west around the north side of a residential area. It continues southwest and then south to end at the proposed gravel pit expansion in the SW/4 of Section 2 (T. 23 N., R. 18 W.).

The site is on Navajo Nation Tribal land and is bordered by US 491 to the east and BIA N-19 to the west. It is roughly ½ - three miles southwest of the town of Newcomb (Appendix A).

This Biological Assessment (BA) was prepared to determine potential impacts of the proposed action to endangered, threatened, and candidate wildlife and plant species and habitats within the Grey Mesa project area, in accordance with Section 10 of the Endangered Species Act (ESA). Wildlife and plant surveys were conducted to determine potential presence of suitable habitat and/or site occupation of federally and Navajo Nation-listed threatened, endangered, or special status species.

2.0 METHODOLOGY

Prior to implementation of fieldwork and report preparation, the current lists of federal (USFWS, NM Ecological Field Services Office, 2009) and Navajo Nation (NMDGF, 2009) listed and special status/ sensitive animal species known to occur in San Juan County were reviewed (Tables 4.1a, 4.3a).

Wildlife surveys were conducted at the existing pit, proposed pit, and access road by walking transect lines, including a 1/2 mile buffer. Areas within a one mile radius with potentially suitable nesting habitat for raptors were also surveyed. The surveyor used 8 x 42 standard binoculars and a spotting scope for wildlife observation purposes. All vertebrate species detected by sight, sound, and sign were recorded. Weather conditions, altitude, and identifiable plant species were also recorded. Global positioning coordinates were recorded for any prominent features such as nest sites.

The botanical survey of the access road was accomplished by walking zigzag transects on either side of the existing road to a distance of 40 feet on each side. The expansion area was surveyed

by walking parallel transects across the area at a spacing of 50 to 100 feet apart. The emphasis of the survey was to inspect for listed species of concern. In addition, all plant species were identified in order to provide a more complete description of the environment

3.0 EXISTING HABITAT

3.1 EXISTING ABANDONED GRAVEL PIT

Habitat at the existing pit consists of relatively barren, arid landscape with patchy vegetation and ≥ 75% bare ground in some areas. The site is previously disturbed from gravel pit activities, which took place roughly 25 years ago, and grazing. Soils are gravelly and heavily eroded (Figure 1 - Appendix B). The abandoned gravel pit is located in a shallow, level wash with drainage to the southwest. What sparse vegetation exists at the site shows signs of moderate to heavy grazing from domestic horses and sheep. There are no perennial streams or wetlands.

3.2 PROPOSED GRAVEL PIT EXPANSION AND ACCESS ROAD

The access road is located in the shallow basin adjacent to Grey Mesa and begins on the west side of US 491. The road then travels south-southwest, climbing up the mesa side to the north side of the gravel pit expansion. Existing habitat at the access road consists of barren, sandy gravel surfaces with sparse vegetation (Figure 2 - Appendix B). A power line crosses the access road at the eastern end, near US 491. Vegetation is sparse along the access route and is predominated by salt desert scrub with species such as shadscale (*Atriplex confertifolia*) and alkali sacaton (*Sporobolus airoides*).

The pit expansion site is located on the top of Grey Mesa. The dominant plants are shadscale and alkali sacaton with areas of galleta (*Pleuraphis jamesii*). Winterfat (*Krascheninnikovia lanata*) is common in the west third of the area. Russian-thistle (*Salsola tragus*) and false buffalo-grass (*Munroa squarrosa*) are scattered throughout and are occasionally dominant. The plant community along the rocky rim of the southern boundary of the project area is dominated by purple three-awn (*Aristida purpurea*).

The soil is predominantly sandy clay loam with gravel and cobbles in the basin, with areas of clay loam and loamy sand. The mesa top is mostly sandy loam with a heavy gravel content. The soils are derived from the underlying Menefee formation (NMBGMR, 2003). Elevation throughout the project area ranges from approximately 5540 to 5800 feet.

There are several residences along the southeast edge of the site, near the beginning of the access road, as well as a horse corral at the south edge. Domestic horses were on site during the wildlife survey. With the exception of the mesa sides and some grassland habitat, there are few habitat features of wildlife value in the general area. Although there is a small drainage lined with several small salt cedar (*Tamarix sp.*) in the basin, there are no wetlands, perennial flows, or apparent water sources. The overall site is moderately to heavily disturbed from previous gravel pit activities, grazing, and human activities such as refuse dumping, with almost no disturbance along the western boundary of the expansion site.

4.0 SURVEY RESULTS

4.1 THREATENED, ENDANGERED AND SPECIAL STATUS WILDLIFE SPECIES

During the late afternoon of June 08 and morning of June 09, 2009, Wildlife Biologist June M. Galloway conducted a pedestrian survey at the project site. Weather was clear and breezy, with temperatures fluctuating greatly due to heavy thunder storms in the area.

No threatened, endangered, or special status wildlife species were documented within or adjacent to the project area during the wildlife surveys (Table 4.1a) (Appendix B). One species protected by the Migratory Bird Treaty Act (1918), common raven (*Corvus corax*), was observed nesting on-site at the time of the surveys. In addition, a red fox vixen with two kits was also documented.

Table 4.1a. Federal and Navajo Nation listed (NESL) threatened, endangered, and special status wildlife species with the potential to occur within the vicinity of the Proposed Action (San Juan County, NM) (2009).

Common Name (scientific name)	Federal Status	NESL	HABITAT ASSOCIATIONS	POTENTIAL TO OCCUR IN THE PROJECT AREA
MAMMALS				
Townsend's big-eared bat (*Corynorhinus townsendii*)	SOC	NESL 4	On the Navajo Nation, roosts and hibernates primarily in sandstone or limestone caves, lava tubes, mine tunnels, and man-made structures in a variety of habitats.	NP
Banner-tailed kangaroo rat (*Dipodomys spectabilis*)		Group 4	Lowland desert grasslands, sand dunes.	NP
Black-footed ferret (*Mustela nigriceps)*	E	Group 2	Open grasslands with large established prairie dog colonies.	NP
Kit fox (*Vulpes macrotis*)		Group 4	Open, arid lowland habitats.	NP
Pronghorn (*Antilocapra americana)*		Group 3	Grasslands, brushlands, bunch-grass and sagebrush areas of open plains and deserts.	NP
BIRDS				
Golden eagle (*Aquila chrysaetos)*		Group 3	A wide variety of open habitats, typically nests in steep cliffs > 30 meters in height.	NP
Ferruginous hawk (*Buteo regalis)*		Group 3	Open grasslands and deserts, typically nests atop rocky pinnacles, small buttes and cliffs	NP
Northern goshawk (*Accipiter gentiles*)		Group 4	Forest species – typically nests along drainages, canyon bottoms, or north-facing forested slopes with high canopy cover.	NP
American peregrine falcon (*Falco peregrinnus anatum)*	SOC	Group 4	Nests in sheer cliff faces typically > 30 meters in height, usually near water or mesic canyons. In migration, occurs in a variety of lowland, wetland habitats.	NP
Artic peregrine falcon (*Falco peregrinus tundrius*)	SOC		Highly migratory, nests on alpine islands and tundra regions.	NP
Black tern	SOC		Breeding habitat includes marshes,	NP

(*Chlidonias niger*)			sloughs, rivers, lakeshores and impoundments. Prefers sheltered offshore waters and bays for non-breeding habitat.	
Mountain plover (*Charadrius montanus*)	SOC	Group 4	Seeks dry, disturbed, or intensively grazed, open, flat tablelands. Bare ground, short vegetation, and flat topography are indicators of ideal habitat.	NP
Western burrowing owl (*Athene cunicularia hypugaea*)	SOC		Grasslands and basin-prairie shrub, normally associated with prairie dog towns.	NP
Yellow-billed cuckoo (*Coccyzus americanus*)	C		Moist, dense riparian thickets, willow stands, overgrown pastures and orchards.	NP
Southwestern willow flycatcher (*Empidonax trailii extimus)*	E	Group 2	Cottonwood-willow riparian corridors.	NP
Baird's sparrow (*Ammodramus bairdii*)	SOC		Grasslands, weedy fields.	NP
HERPETOFAUNA				
Northern leopard frog (*Rana pipiens*)		Group 2	Breeds in wetlands with aquatic vegetation. Found in irrigation ditches, small streams, rivers. Newcomb, NM included in NN historical records.	NP
FISH				
Roundtail chub (*Gila robusta*)	SOC		Throughout Colorado River Basin. Inhabits open areas in deep pools and eddies in middle-sized and larger streams.	NP
INVERTEBRATES				
New Mexico silverspot butterfly *(Speyeria nokomis nitocris*)	SOC		Alpine meadows.	NP
San Juan checkerspot (*Euphydryas anicia chuskae*)	SOC		No habitat information available.	NP

Status
E Endangered T Threatened C Candidate NESL Navajo Endangered Species List SOC Species of Concern

Presence
K Known, documented observation within project area.
S Habitat suitable and species suspected to occur within the project area.
NS Habitat suitable but species is not suspected to occur within the project area.
NP Habitat not present and species unlikely to occur within the project area.

4.2 MIGRATORY BIRDS

Native migratory birds are protected under the Migratory Bird Treaty Act. Birds protected under the Act include all common songbirds, waterfowl, shorebirds, hawks, owls, eagles, ravens, crows, native doves and pigeons, swifts, martins, swallows and others, including their body parts (feathers, plumes etc.), nests, and eggs. The Act protects migratory birds from "take", with take being defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities". A "take" does not include habitat destruction or alteration, as long as

these is not a direct taking of birds, nests, eggs, or parts thereof.

The overall project area is relatively denuded and there is additional disturbance from close proximity to local roads, a highway, and homes. Five (5) avian species documented during the wildlife surveys are protected under the Migratory Bird Treaty Act; turkey vulture (*Cathartes aura*), common raven (*Corvus corax*), western bluebird (*Sialia mexicana*), horned lark (*Eremophila alpestris*), and canyon wren (*Catherpes mexicanus*). If project activities take place after the primary nesting season (April 01 – July 31), no take of migratory birds is anticipated as a result of the proposed action.

4.3 THREATENED, ENDANGERED, AND SPECIAL STATUS PLANT SPECIES

The project area was surveyed on June 19, 2009, by botanist Marian Rohman. This report discusses the potential for disturbance to Mesa Verde cactus (*Sclerocactus mesae-verdae*) and Parish's alkali grass (*Puccinellia parishii*), plants identified by the Navajo Nation Natural Heritage Program (NNHP) as species of concern (Table 4.2a). Both species have the potential to occur on the Newcomb, NM, 7.5-minute quadrangle, which contains the boundaries of the project area (Detsoi, 2009).

Table 4.3a. Plants cited by the Navajo Natural Heritage Program**:** Mesa Verde cactus and Parish's alkali grass are identified by the Navajo Natural Heritage Program as species of concern that could occur in the project area. (Detsoi, 2009)

Parish's alkali grass (*Puccinellia parishii*)	Alkaline springs, seeps, or seasonally wet areas such as washes at 5000-7200 feet. The species requires continuously damp soils during its late winter to spring growing period. (McDonald, 1999a; Roth, 2001a)	No appropriate habitat: there are no alkaline springs, seeps, or seasonally wet areas in the project area. (NP)
Mesa Verde cactus (*Sclerocactus mesae-verdae*)	Sparsely vegetated salt desert scrub communities on low rolling clay hills formed from the Mancos or Fruitland Shale formations, occasionally on Menefee overlaying Mancos formation. It is most frequently found on the tops of hills or benches and along slopes at 4,900-5,500 feet. Known from San Juan County from the Colorado border south to near Naschitti. (McDonald, 1999b; Roth, 2001b)	No appropriate habitat: there is salt desert scrub in the project area; however, the access road is too sparsely vegetated and heavily graveled and cobbled, or too sandy. The mesa top is a transitional community and the soil is too sandy. The area is in the Menefee formation, with no nearby Mancos or Fruitland shale. The project area is slightly to well above the known elevational range of the species. (NP)

Potential to Occur** K – Known, documented observation within project area.
S – Habitat suitable and species suspected to occur within the project area.
NS – Habitat suitable but species is not suspected to occur within the project area.
NP – Habitat not present and species unlikely to occur within the project area

Mesa Verde cactus is a small, usually solitary cactus. It is oval to depressed globose in shape and usually 3 to 11 cm tall and 4 to 8 cm in diameter. Central spines are generally absent. The flowers are yellowish-cream to pinkish and appear from early-April to early-May. This plant grows in sparsely vegetated shale or adobe clay badlands typically in the Fruitland and Mancos Shale formations, but has also been found to growing in the Menefee formation overlaying Mancos shale. It is commonly associated with mat saltbush (*Atriplex corrugata*), shadscale (*Atriplex confertifolia*), frankenia (*Frankenia jamesii*), and starvation prickly pear (*Opuntia polyacantha*) at elevations of 4900 to 5500 feet. (Roth, 2001b; McDonald, 1999b)

Parish's alkali grass is a short-lived winter or spring annual grass that is easily distinguished from its perennial relatives. It grows in alkaline springs, seeps, and seasonally wet areas, from elevations of 5000 to 7200 feet. The species requires continuously damp soils during its late winter to spring growing period. (McDonald, 1999a) On Navajo lands, it flowers from late April to early June. (Roth, 2001a) Sufficient alkalinity for the species is indicated by a white alkaline crust along the edges of its habitat when wet and covering the area when dry. (Detsoi, 2009; personal observation).

4.4 NOXIOUS AND INVASIVE WEEDS

The Bureau of Indian Affairs lists three species of noxious weeds as potential invaders and fourteen species as new invaders on the Navajo Reservation (USDI, OSM, 1999). Of these, only halogeton (*Halogeton glomeratus*) is present. It was documented as scattered plants along the access road in the residential area at the start of the project site and also several feet east of the road's turn south to the mesa and west of that turn. Halogeton is a Priority B species, indicating that is known to have invaded isolated locales on the reservation. Emphasis is placed on immediate control, prevention of seed spread, and eradication. Education, awareness, identification, control, and monitoring are the priorities (USDI, OSM, 1999).

5.0 EFFECTS OF THE PROPOSED ACTION

5.1 INDIRECT/DIRECT EFFECTS

The proposed action will remove soil, grasses, and some shrubs.

5.2 CUMULATIVE EFFECTS

The project area is surrounded by paved and unpaved roads, power lines, residences, corrals, and tribal lands. Construction activity may increase ambient noise level, erosion, and air pollution in the immediate area.

6.0 CONCLUSIONS

It is anticipated that the proposed action will have no impact on threatened, endangered, and special status species. As mentioned previously, the site is previously disturbed and does not appear to provide suitable habitat for many native plant and wildlife species.

Thirteen (13) listed or special status wildlife species are known to inhabit, or have the potential to occur, in San Juan County, New Mexico. None of these species were observed during the survey. Because of the existing on-site disturbance and the project area's lack of suitable habitat for many species, it is unlikely that implementation of the project will result in impact to local animal populations and their associated habitats.

7.0 RECOMMENDATIONS

In order to comply with the Migratory Bird Treaty Act (1918), it is recommended that construction take place outside of the primary nesting season (approximately April through July), if nests are present. Five (5) avian species observed during the surveys are protected under the Act. The act protects migratory birds from "take", which is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities". A "take" does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. No take of migratory birds is anticipated from the proposed project.

The proposed project will not impact Mesa Verde cactus or Parish's alkali grass, two Navajo Natural Heritage Program Species of Concern with the potential to occur in the project area.

8.0 REFERENCES

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9.0 APPENDICES

Appendix A - Site Map
Appendix B - Site Photos
Appendix C - Wildlife species documented at project site
Appendix D - Plant species documented at project site

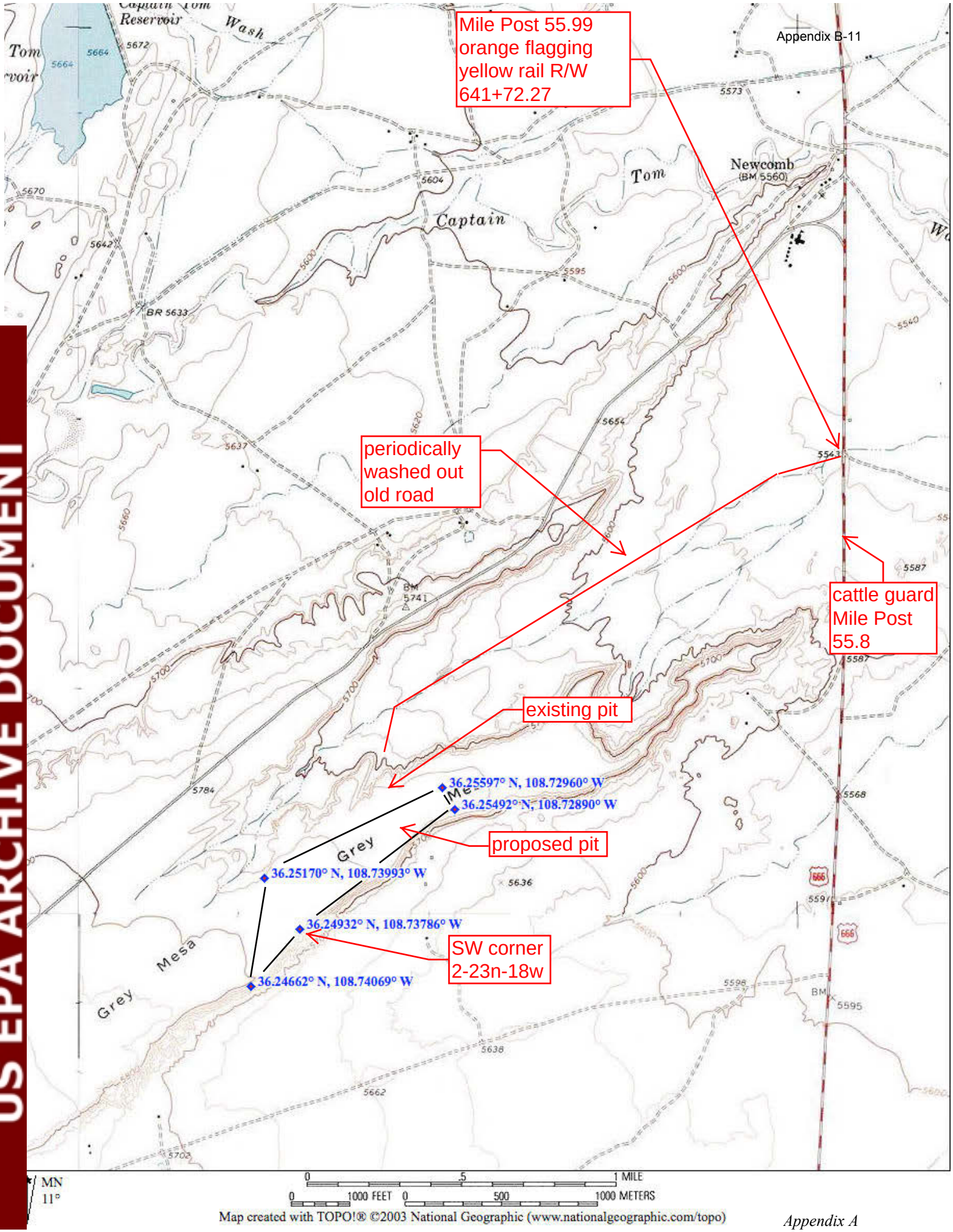

Figure 1. Looking southeast from existing gravel pit (San Juan County, NM).

Figure 2. Habitat around existing road – looking northeast (San Juan County, NM).

WILDLIFE SPECIES DOCUMENTED AT THE PROPOSED GREY MESA GRAVEL PIT EXPANSION SITE AND ACCESS ROAD

(NE/4 of Section 10, SE/4 of Section 3,
and SW/4, NW/4, and NE/4 of Section 2 (T. 23 N., R. 18 W.) and
SE/4 of Section 35 and SW/4 and NE/4 of Section 36 (T. 24 N., R. 18 W.)

Avian species:
Turkey vulture (*Cathartes aura*)
Common raven (*Corvus corax*)*
Western bluebird (*Sialia mexicana*)
Horned lark (*Eremophila alpestris*)
Canyon wren (*Catherpes mexicanus*)*

Mammalian species:
Desert cottontail (*Sylvilagus audubonii*)
Red fox (*Vulpes fulvus*)*

*breeding documented on site

PLANT SPECIES DOCUMENTED AT THE PROPOSED GREY MESA GRAVEL PIT EXPANSION SITE AND ACCESS ROAD

Scientific and common names according to Allred, 2007. Identifications based on Ivey 2003 and Weber and Wittman 2001.

Shrubs and Subshrubs

Artemisia bigelovii	Bigelow's sagebrush
Atriplex canescens	Four-wing saltbush
Atriplex gardneri var. *cuneata*	Valley saltbush
Atriplex confertifolia	Shadscale
Gutierrezia sarothrae	Broom snakeweed
Krascheninnikovia lanata	Winterfat
Lycium pallidum	Pale wolfberry

Cacti

Opuntia polyacantha	*Starvation prickly pear*

Grasses

Achnatherum hymenoides	Indian ricegrass
Aristida purpurea	Purple threeawn
Bouteloua curtipendula	Sideoats grama
Bromus tectorum	Cheatgrass
Munroa squarrosa	False buffalo-grass
Pleuraphis jamesii	Galleta
Scleropogon brevifolius	Burrograss
Sporobolus airoides	Alkali sacaton
Sporobolus cryptandrus	Sand dropseed

Forbs

Ambrosia acanthicarpa	Bur ragweed
Chaetopappa ericoides	Sand aster
Chamaesaracha coronopus	Green-leaf five-eyes
Chamaesyce sp.	Spurge
Chenopodium album	Lamb's quarter
Chenopodium leptophyllum	Narrowleaf goosefoot
Cryptantha crassisepala var. *crassisepala*	Thick-sepal cat's-eye
Cymopterus sp.	Spring-parsley
Dieteria sp.	Spine-aster

Halogeton glomeratus	Halogeton
Machaeranthera tanacetifolia	Tahoka daisy
Mentzelia multiflora	Adonis blazingstar
Platyschkuhria integrifolia var. *oblongifolia*	Basin-daisy
Salsola tragus	Russian-thistle
Senecio sp.	Groundsel
Sphaeralcea coccinea	Scarlet globemallow
Sphaeralcea fendleri	Fendler's globemallow
Sphaeralcea grossulariifolia	Gooseberry globemallow
Stephanomeria exigua	Twiggy wire-lettuce
Verbesina encelioides	Golden crownbea

U.S. Fish & Wildlife Service

My project

IPaC Trust Resource Report

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Appendix C-2

US Fish & Wildlife Service

IPaC Trust Resource Report

Project Description

NAME

My project

PROJECT CODE

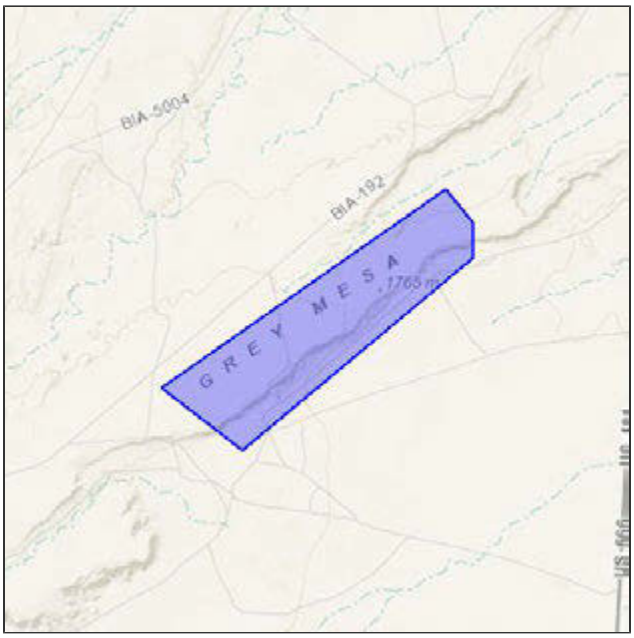
JXO5E-N3TNJ-EITGQ-5AVEF-M67J2M

LOCATION

San Juan County, New Mexico

DESCRIPTION

No description provided



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

New Mexico Ecological Services Field Office
2105 Osuna Road Ne
Albuquerque, NM 87113-1001
(505) 346-2525

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the Endangered Species Program and should be considered as part of an effect analysis for this project.

Birds

Southwestern Willow Flycatcher Empidonax traillii extimus — **Endangered**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B094

Sprague's Pipit Anthus spragueii — **Candidate**

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0GD

Yellow-billed Cuckoo Coccyzus americanus — **Threatened**

CRITICAL HABITAT
There is **proposed** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06R

Fishes

Colorado Pikeminnow (=squawfish) Ptychocheilus lucius — **Endangered**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E006

Razorback Sucker Xyrauchen texanus — **Endangered**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E054

Zuni Bluehead Sucker Catostomus discobolus yarrowi — **Endangered**

CRITICAL HABITAT
There is **proposed** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E063

Flowering Plants

Knowlton's Cactus Pediocactus knowltonii **Endangered**

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1ZY

Mancos Milk-vetch Astragalus humillimus **Endangered**

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q1T9

Mesa Verde Cactus Sclerocactus mesae-verdae **Threatened**

CRITICAL HABITAT
No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q21J

Mammals

Canada Lynx Lynx canadensis **Threatened**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A073

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

6. HISTORIC PROPERTIES SCREENING PROCESS

The assessment performed in 2009 as part of the environmental assessment determined that, with the stipulation that no widening of the existing haul road be undertaken in the vicinity of the sites, there would be "no historic properties affected" for the project areas. Any cultural and/or paleontology resource discovered by the property owner, its contractors, or anyone working on their behalf during the proposed action would be immediately reported to the Navajo Nation Historic Preservation Department (NNHPD) and/or the BLM Farmington Field Office Archaeologist. All operations would be suspended in the immediate area until approval to proceed is issued by NNHPD. More information on the historic properties screening process is included in the 2010 environmental assessment included in Section 5 of this application.