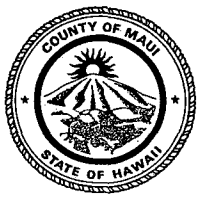
ALAN M. ARAKAWA
Mayor

GILBERT S. COLOMA-AGARAN
Director

MILTON M. ARAKAWA, A.I.C.P.
Deputy Director



RALPH NAGAMINE, L.S., P.E.
Development Services Administration

TRACY TAKAMINE, P.E.
Wastewater Reclamation Division

CARY YAMASHITA, P.E.
Engineering Division

BRIAN HASHIRO, P.E.
Highways Division

Solid Waste Division

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

December 1, 2004

Certified Mail
7004 0550 0000 1446 5982
Return Receipt Requested

Ms. Laura Bose, Office Manager
U.S. Environmental Protection Agency, Region 9
Office of Ground Water
75 Hawthorne Street
San Francisco, CA 94105

Dear Ms. Bose:

SUBJECT: **LAHAINA WASTEWATER RECLAMATION FACILITY**
U.I.C. PERMIT - PERMIT NO. HI596001
PERMIT RENEWAL APPLICATION

Submitted herewith is the application for renewal of the subject permit which expires on June 12, 2005. This application covers four Class V wells at the Lahaina Wastewater Reclamation Facility. We have reviewed our existing permit and have enclosed the permit application and Attachments A, B, C, F, H, M, P, Q, R and U as supplemental information for the renewal request.

Should you have any questions or require additional information, please contact Mr. Scott Rollins of our Wastewater Reclamation Division at the above address or you may call him at (808) 270-7417.

Sincerely,

G. S. Coloma-Agaran

Gilbert S. Coloma-Agaran
Director of Public Works
and Environmental Management

encl.

cc. Jerry Morgan

GCA:sr(102804 WWRF EPA UIC Rpt)

OMB No. 2040-0042 Approval Expires 1/31/05

United States Environmental Protection Agency

EPA

Underground Injection Control
Permit Application

(Collected under the authority of the Safe Drinking Water Act. Sections 1421, 1422, 40 CFR 144)

I. EPA ID Number		T/A	C
U			

Read Attached Instructions Before Starting

For Official Use Only

Application approved mo day year	Date received mo day year	Permit Number	Well ID	FINDS Number

II. Owner Name and Address

Owner Name: County of Maui - Wastewater Reclamation Division

Street Address: 3300 Honoapiilani Hwy.

Phone Number: (808) 661-8460

City: Lahaina

State: HI

ZIP CODE: 96791

III. Operator Name and Address

Owner Name: County of Maui - Dept. of Public Works & Environmental Mgt.

Street Address: 200 S. High Street

Phone Number: (808) 720-7845

City: Wailuku

State: HI

ZIP CODE: 96793

IV. Commercial Facility

- [ ] Yes
- [x] No

V. Ownership

- [ ] Private
- [ ] Federal
- [x] Other

VI. Legal Contact

- [ ] Owner
- [x] Operator

VII. SIC Codes

4952

VIII. Well Status *(Mark "x")*

- [x] A. Operating — Date Started mo day year: 12/31/1979
- [ ] B. Modification/Conversion
- [ ] C. Proposed

IX. Type of Permit Requested *(Mark "x" and specify if required)*

- [x] A. Individual
- [ ] B. Area

Number of Existing Wells	Number of Proposed Wells	Name(s) of field(s) or project(s)
4	0	Lahaina Wastewater Reclamation Facility

X. Class and Type of Well *(see reverse)*

A. Class(es) (enter code(s))	B. Type(s) (enter code(s))	C. If class is "other" or type is code 'x,' explain	D. Number of wells per type (if area permit)
V	STE		Four Class V STE

XI. Location of Well(s) or Approximate Center of Field or Project

Latitude Deg	Min	Sec	Longitude Deg	Min	Sec	Township and Range Sec	Twp	Range	1/4 Sec	Feet From	Line	Feet From	Line
20	56	55	156	41	25								

XII. Indian Lands (Mark 'x')

- [ ] Yes
- [x] No

XIII. Attachments

(Complete the following questions on a separate sheet(s) and number accordingly; see instructions)

For Classes I, II, III, (and other classes) complete and submit on a separate sheet(s) Attachments A--U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application.

XIV. Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

A. Name and Title *(Type or Print)*	B. Phone No. *(Area Code and No.)*
Gilbert Coloma-Agaran, Director Department of Public Works and Environmental Management	(808) 270-7845
C. Signature	D. Date Signed
Gilbert Coloma-Agaran	

EPA Form 7520-6 (Rev. 8-01)

ATTACHMENT A

ATTACHMENT A

Lahaina Wastewater Reclamation Facility
UIC Permit Renewal - Permit No. HI596001

Area of Review Methods

The Area of Review shall be a fixed radius of 1/4 mile from the well bore. Exhibit B-1 delineates this area.

ATTACHMENT B

ATTACHMENT B

Lahaina Wastewater Reclamation Facility
UIC Permit Renewal - Permit No. HI596001

Maps of Well/Area and Area of Review

Attached are the following exhibits:

Exhibit B-1: Area of Review

Exhibit B-2: Detail Map of Lahaina Wastewater Reclamation Facility

Lahaina Wastewater Reclamation Facility Injection Wells

AREA OF REVIEW

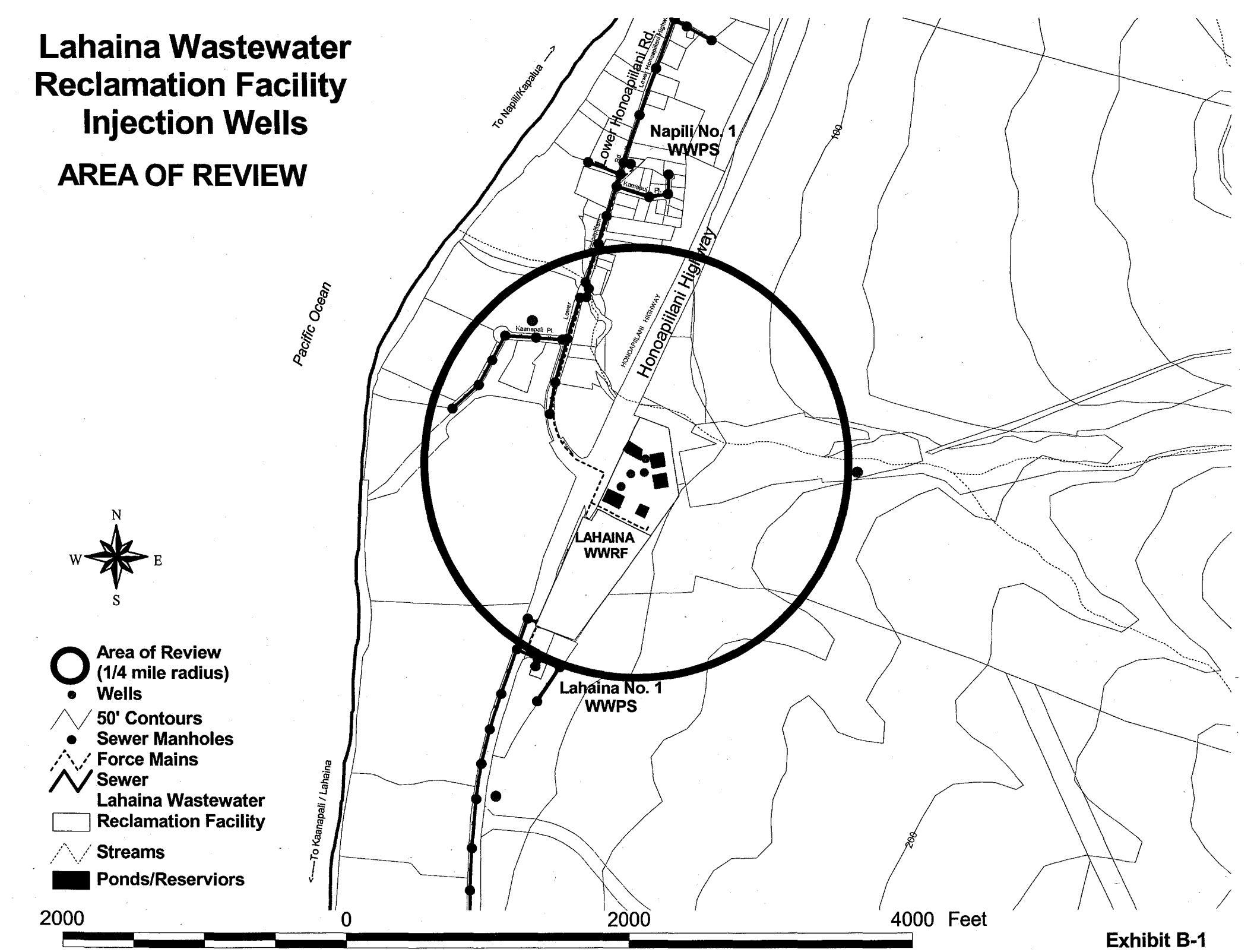
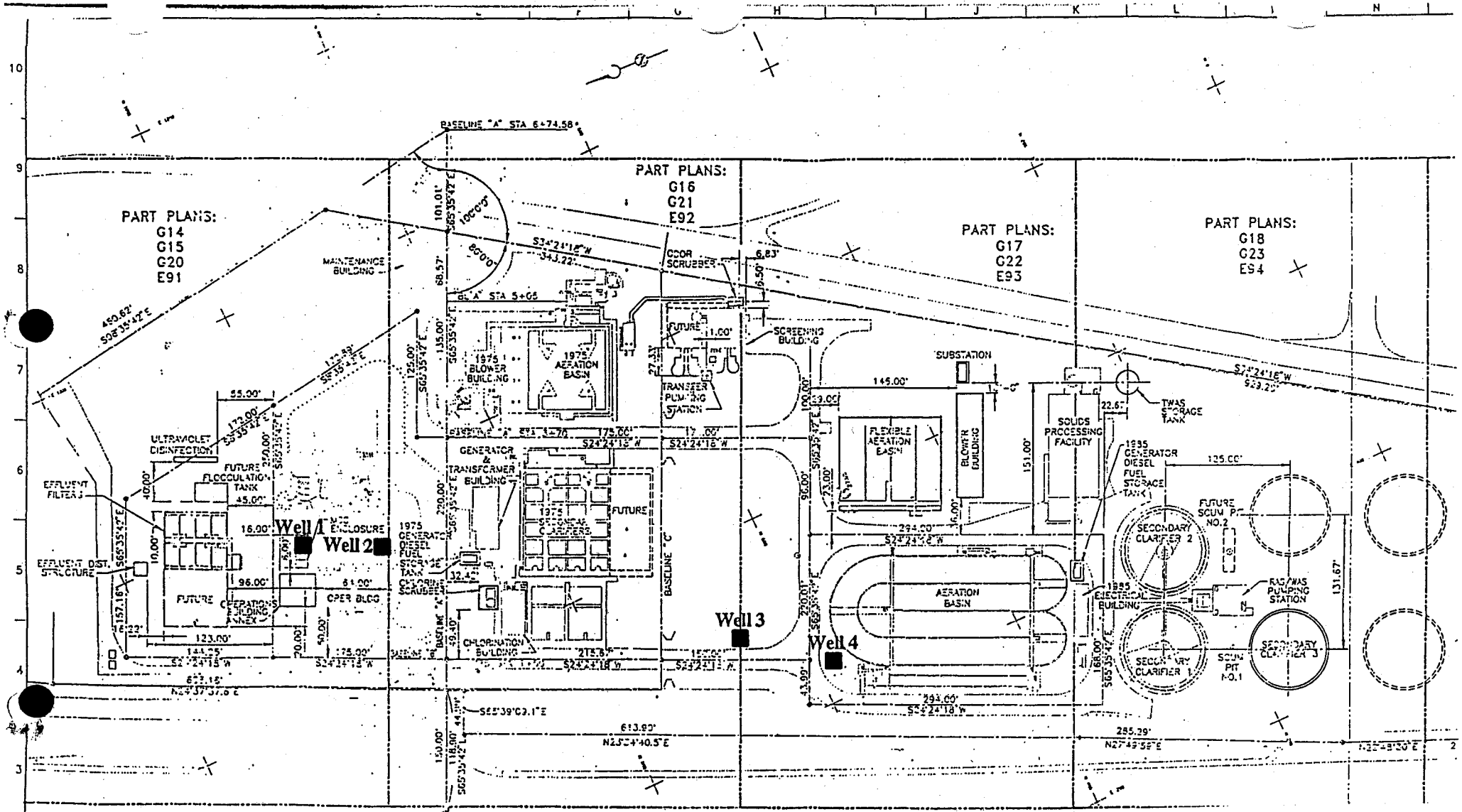


Exhibit B-1



BENCHMARK: BM. A SET WEST OF HONOAPIILANI HIGHWAY AT SOUTH END OF PLANT WITH ELEVATION OF 19.52 FEET ABOVE MEAN SEA LEVEL BASED ON U.S.C&GS DATUM.

BASIS OF THE SITE GRID: SITE GRID SET AT BM. A WITH GRID LINES BASED ON HAWAII STATE PLANE SYSTEM REFERENCED TO TRIANGULATION STATION "LAINA" THE SOUTHEAST PROPERTY CORNER HAS COORDINATES OF N16,997.75, E6,779.95 IN THE HAWAII STATE PLANE COORDINATE SYSTEM.

PROPERTY LINE (P)
PROPERTY LINES ARE SHOWN FROM REC
PREVIOUS CONSTRUCTION, AND ARE FOR
USE ONLY. REFER TO ORIGINAL SURVEY I
OTHER USES. PROPERTY LINES AT NORTH
SITE ARE NOT SHOWN.

Brown and Caldwell Consultants

INJECTION WELL LOCATION PLAN

LAHAINA WASTEWATER RECLAMATION FACILITY

Located at 3300 Honoapiilani Hwy., Honokowai, Lahaina, Maui

UIC Permit No. UM-1357

Injection Well Location & Number ■ "1"

ATTACHMENT C

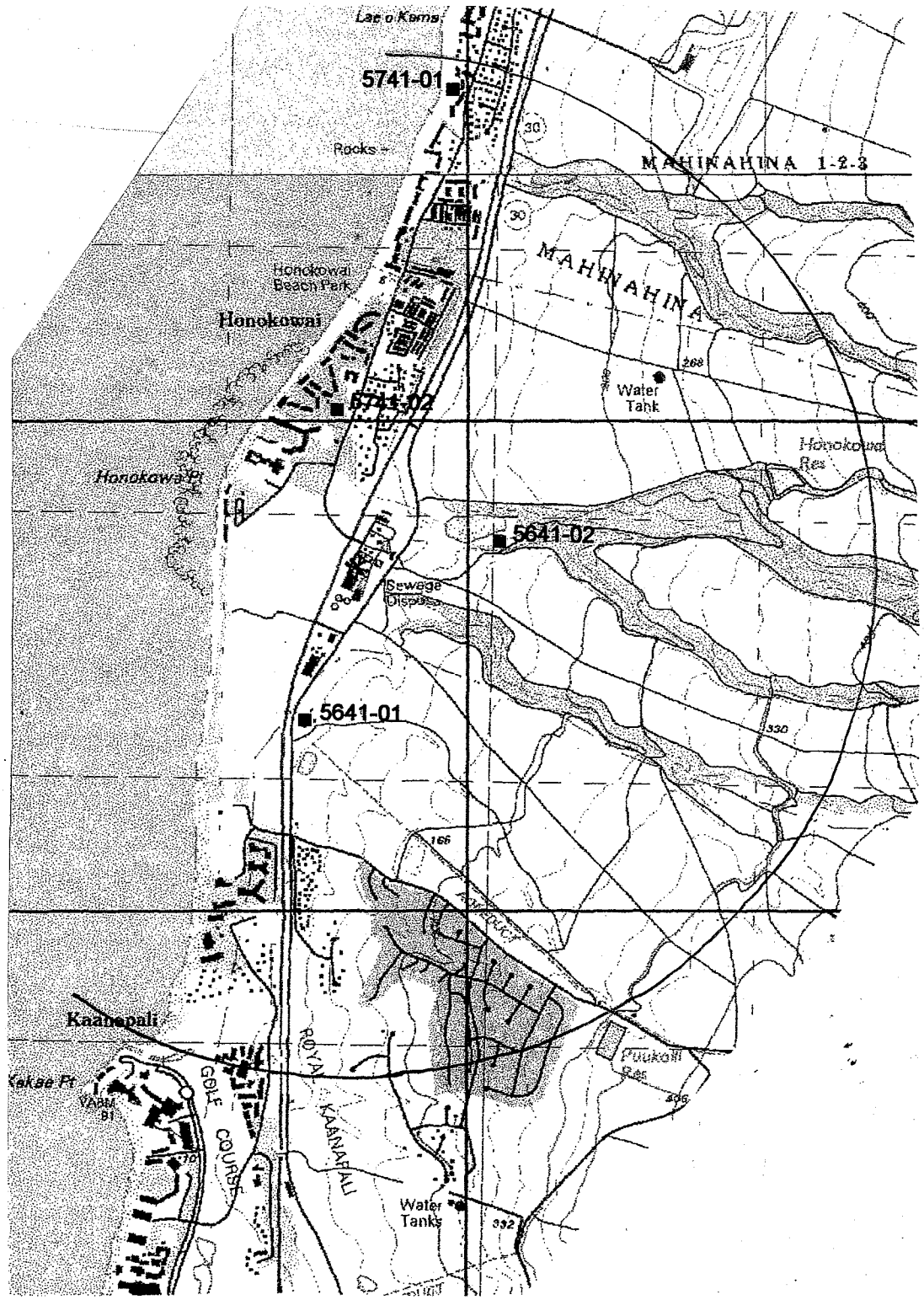
ATTACHMENT C

Lahaina Wastewater Reclamation Facility
UIC Permit Renewal - Permit No. HI596001

Corrective Action Plan and Well Data:

Attached as an exhibit is a copy of the map and well data obtained from the State of Hawaii Department of Land and Natural Resources in October 2004 showing 4 wells in the vicinity of the Lahaina WWRF. Note that these wells are for irrigation purposes and vary from 25 to 65 feet deep. A corrective action plan is not deemed necessary for this application.

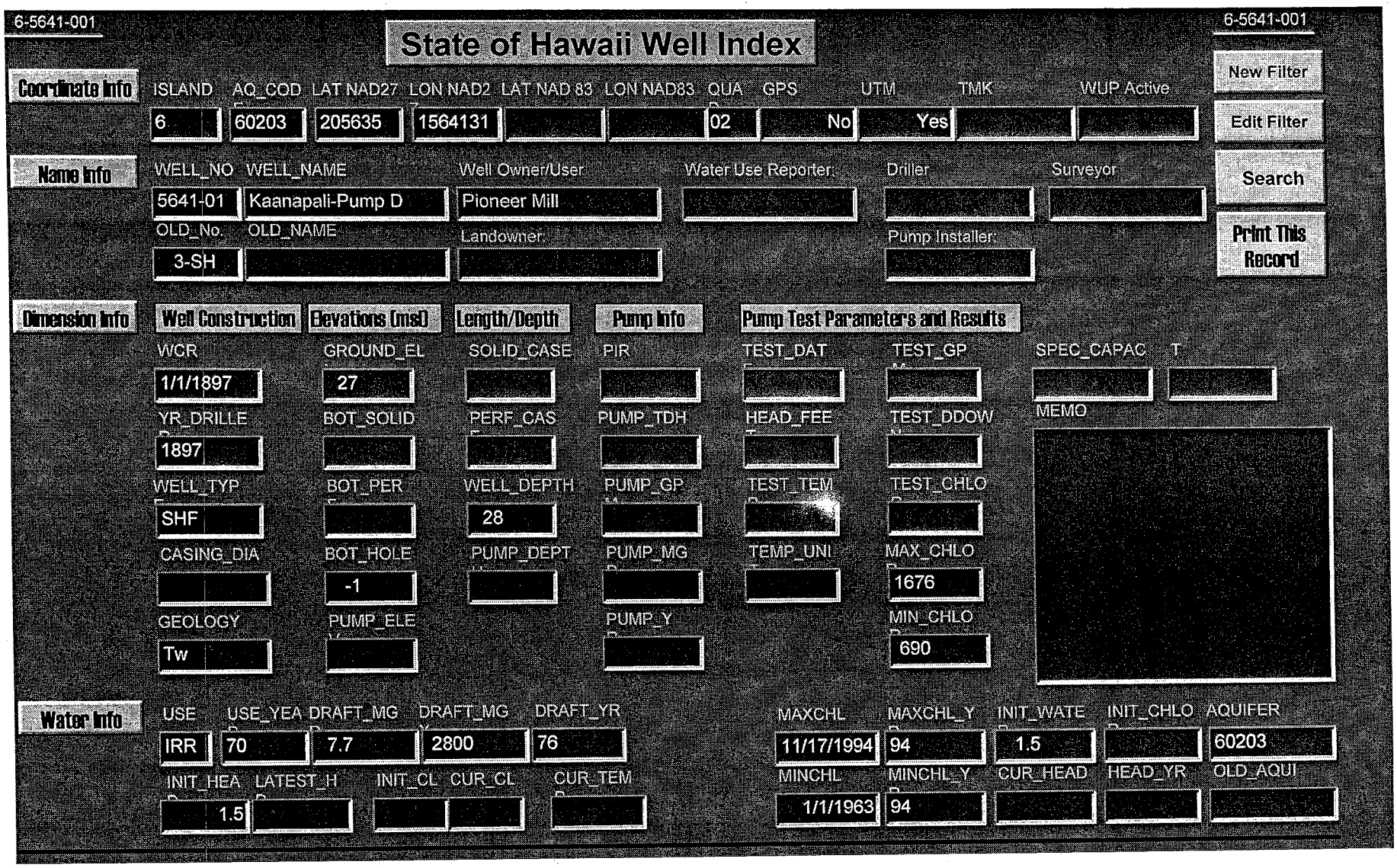
Exhibit C-1: Other Wells in General Proximity



A Portion of the
LAHAINA QUADRANGLE
7.5 minute series
Scale 1:24000

Source DNLR 10/04

Exhibit C-1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State of Hawaii Well Index
6-5641-001
New Filter
Edit Filter
Search
Print This Record
Coordinate Info
ISLAND
AQ_COD
LAT NAD27
LON NAD2
LAT NAD 83
LON NAD83
QUA
GPS
UTM
TMK
WUP Active
6
60203
205635
1564131
02
No
Yes
Name Info
WELL_NO
WELL_NAME
Well Owner/User
Water Use Reporter:
Driller
Surveyor
5641-01
Kaanapali-Pump D
Pioneer Mill
OLD_No.
OLD_NAME
Landowner:
Pump Installer:
3-SH
Dimension Info
Well Construction
Elevations (msl)
Length/Depth
Pump Info
Pump Test Parameters and Results
WCR
GROUND_EL
SOLID_CASE
PIR
TEST_DAT
TEST_GP
SPEC_CAPAC
T
1/1/1897
27
YR_DRILLE
BOT_SOLID
PERF_CAS
PUMP_TDH
HEAD_FEE
TEST_DDOW
MEMO
1897
WELL_TYP
BOT_PER
WELL_DEPTH
PUMP_GP
TEST_TEM
TEST_CHLO
SHF
28
CASING_DIA
BOT_HOLE
PUMP_DEPT
PUMP_MG
TEMP_UNI
MAX_CHLO
-1
1676
GEOLOGY
PUMP_ELE
PUMP_Y
MIN_CHLO
Tw
690
Water Info
USE
USE_YEA
DRAFT_MG
DRAFT_MG
DRAFT_YR
MAXCHL
MAXCHL_Y
INIT_WATE
INIT_CHLO
AQUIFER
IRR
70
7.7
2800
76
11/17/1994
94
1.5
60203
INIT_HEA
LATEST_H
INIT_CL
CUR_CL
CUR_TEM
MINCHL
MINCHL_Y
CUR_HEAD
HEAD_YR
OLD_AQUI
1.5
1/1/1963
94

Exhibit C-1

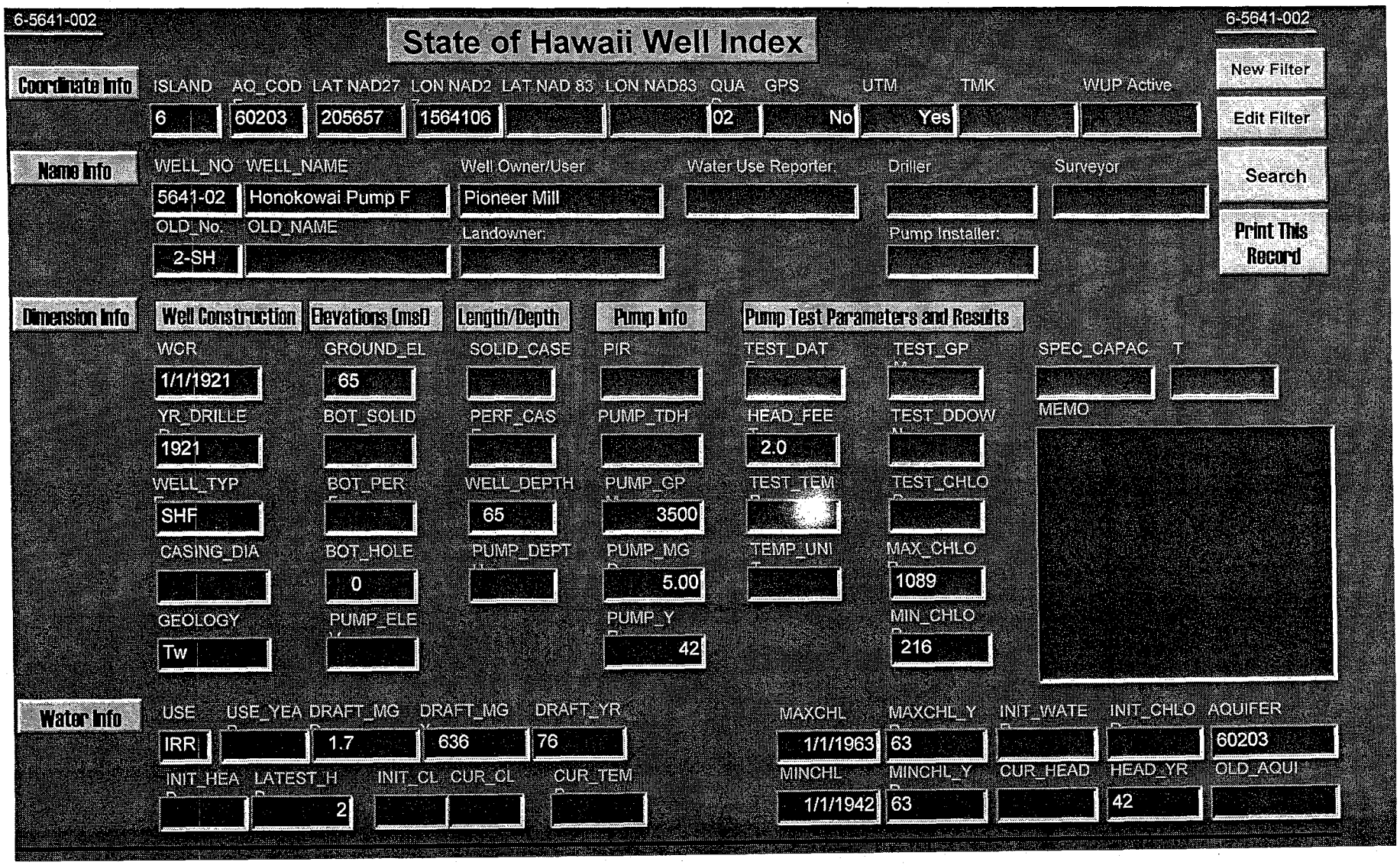

6-5641-002
State of Hawaii Well Index
6-5641-002
New Filter
Edit Filter
Search
Print This Record
Coordinate Info
ISLAND AQ_COD LAT NAD27 LON NAD2 LAT NAD 83 LON NAD83 QUA GPS UTM TMK WUP Active
6 60203 205657 1564106 02 No Yes
Name Info
WELL_NO WELL_NAME Well Owner/User Water Use Reporter Driller Surveyor
5641-02 Honokowai Pump F Pioneer Mill
OLD_No. OLD_NAME Landowner: Pump Installer:
2-SH
Dimension Info
Well Construction
Elevations (msl)
Length/Depth
Pump Info
Pump Test Parameters and Results
WCR GROUND_EL SOLID_CASE PIR TEST_DAT TEST_GP SPEC_CAPAC T
1/1/1921 65
YR_DRILLE BOT_SOLID PERF_CAS PUMP_TDH HEAD_FEE TEST_DDOW MEMO
1921 2.0
WELL_TYP BOT_PER WELL_DEPTH PUMP_GP TEST_TEM TEST_CHLO
SHF 65 3500
CASING_DIA BOT_HOLE PUMP_DEPT PUMP_MG TEMP_UNI MAX_CHLO
0 5.00 1089
GEOLOGY PUMP_ELE PUMP_Y MIN_CHLO
Tw 42 216
Water Info
USE USE_YEA DRAFT_MG DRAFT_MG DRAFT_YR MAXCHL MAXCHL_Y INIT_WATE INIT_CHLO AQUIFER
IRR 1.7 636 76 1/1/1963 63 60203
INIT_HEA LATEST_H INIT_CL CUR_CL CUR_TEM MINCHL MINCHL_Y CUR_HEAD HEAD_YR OLD_AQUI
2 1/1/1942 63 42

Exhibit C-1

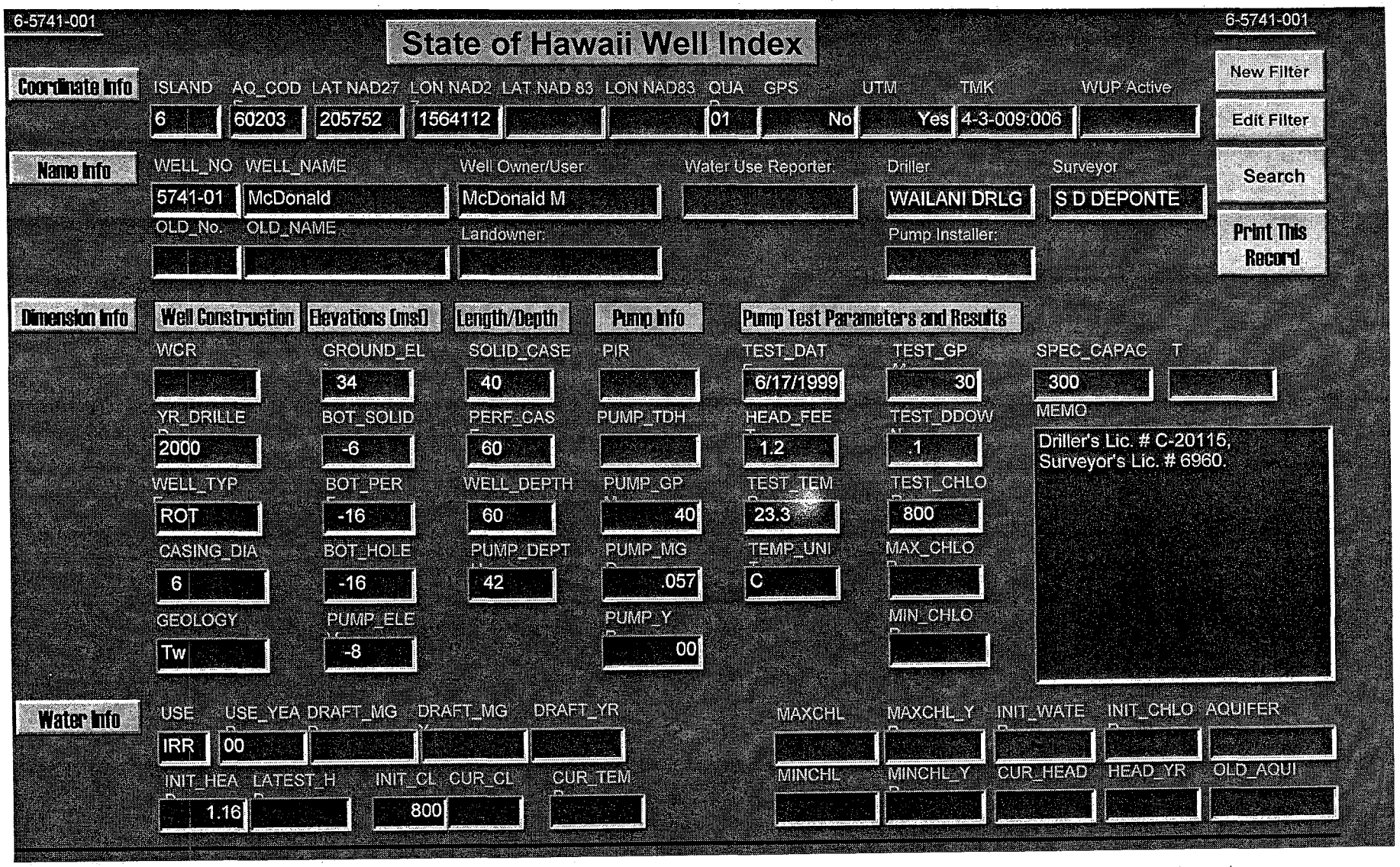


Exhibit C-1

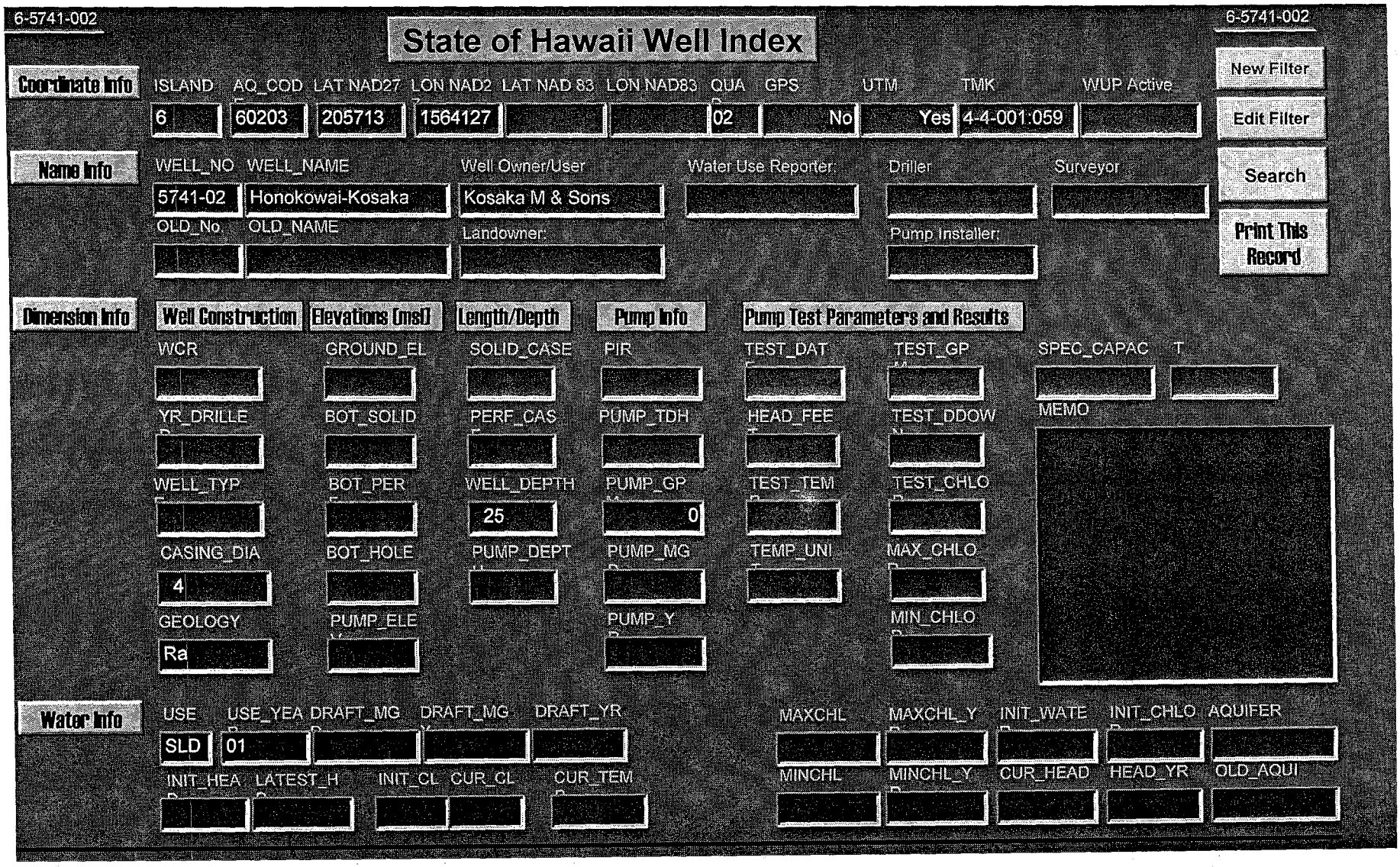


Exhibit C-1

ATTACHMENT F

ATTACHMENT F

Lahaina Wastewater Reclamation Facility
UIC Permit Renewal - Permit No. HI596001

Maps and Cross Sections of Geologic Structure of Area

The Lahaina Wastewater Reclamation Facility (WWRF) is located on the western side of the island and is situated approximately 1/3 mile from the Pacific Ocean. The injection wells are located below the UIC line designated by the State Department of Health. Attached are exhibits describing the geology of the area and showing the UIC line. Note the Lahaina WWRF is adjacent to the highway within the blue UIC zone.

Attached are the following Exhibits:

Exhibit F-1: Area Geology Description

Exhibit F-2: Underground Injection Control Areas

GEOLOGY

The geology of West Maui is described in detail by Stearns and Macdonald (1942, p. 156-187). The Lahaina District lies on the west side of a deeply dissected dome of volcanic rocks called West Maui Mountain. West Maui Mountain is nearly circular in plan and is asymmetric in profile. The volcanic flows on the east and south sides dip more steeply than those on the north and west sides. The dome has been reduced by erosion from a summit altitude estimated to have been 7,000 feet (Stearns, 1942, p. 156) to 5,788 feet at Puu Kukui. Numerous steep-walled valleys have been cut in the mountain.

Volcanic rocks of West Maui Mountain are lava flows, dikes, and pyroclastic deposits ranging from Pliocene (?) to late Pleistocene or Holocene in age (Davis and Macdonald, in Avias, Jacques, 1956). On the basis of lithology and stratigraphic position, these rocks are differentiated into the Wailuku, Honolua, and Lahaina Volcanic Series. Sedimentary rocks consist of consolidated marine, alluvial, and colluvial deposits of middle and late Pleistocene age and unconsolidated beach and alluvial deposits of Holocene age.

The areal distribution of rocks in the Lahaina District is shown on figure 5, and their lithology and water-bearing characteristics are summarized in table 1.

The great bulk of the rocks making up West Maui Mountain is primitive olivine basalt of the Wailuku Volcanic Series. The Wailuku flows are thin-bedded and scoriaceous in the southern part of the Lahaina area, where they flowed on steep dip slopes, and are characterized by structural features such as interflow clinker beds, scoriaceous zones, lava tubes, and joints. Where they have never been covered by younger volcanic rocks, they are weathered as deep as 100 feet. Individual flows are as thick as 100 feet.

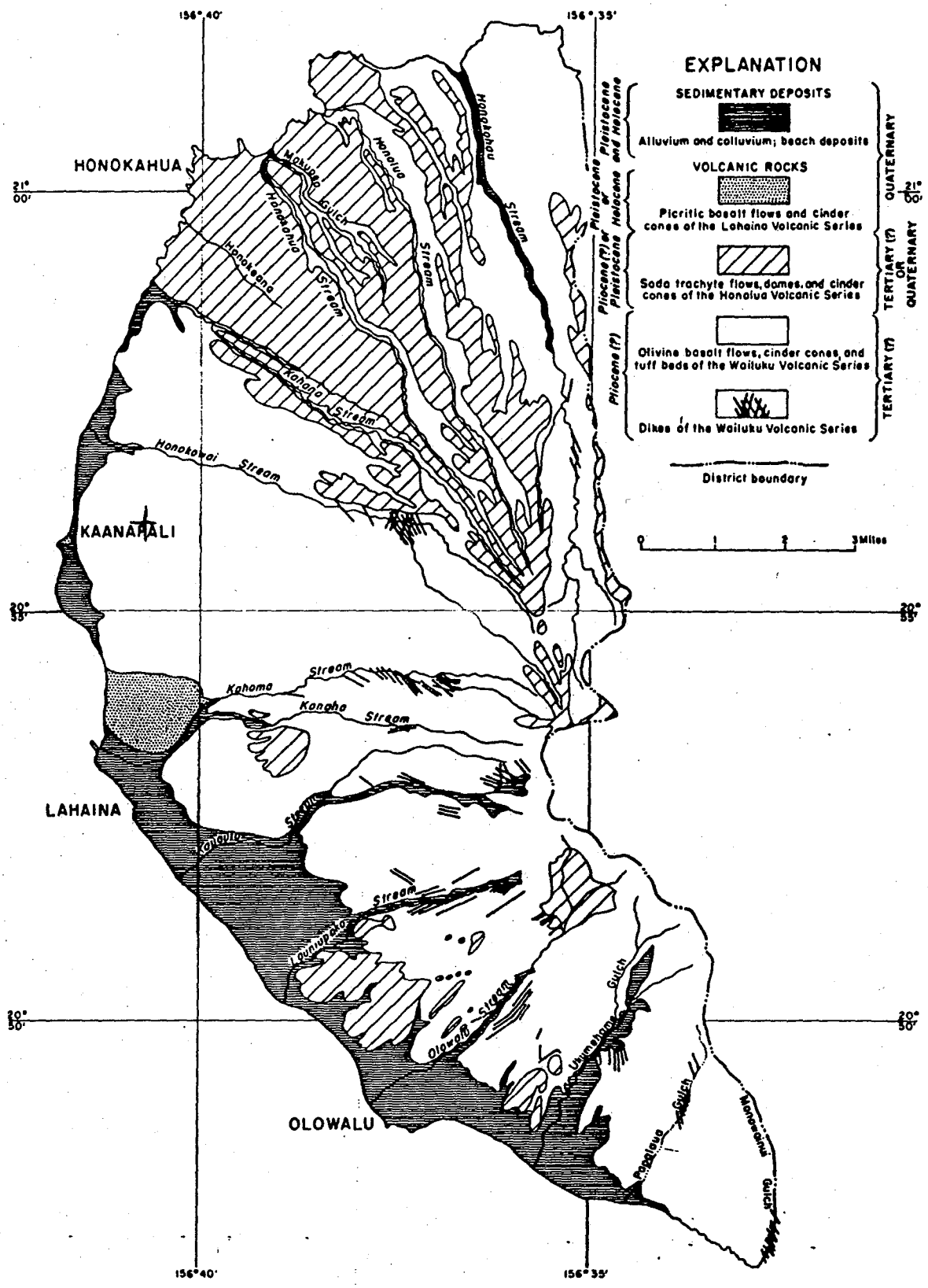


Figure 5. GENERALIZED GEOLOGIC MAP OF LAHAINA DISTRICT

ATTACHMENT H

ATTACHMENT H

Lahaina Wastewater Reclamation Facility
UIC Permit Renewal - Permit No. HI596001

Operating Data:

The treated wastewater is distributed via gravity to the four (4) injection wells covered under this permit. Typically only three wells are open at any given time. Generally, one well is closed per month.

(1) Flows to the wells are limited by the Department of Health UIC Permit as follows:

Average daily rate: 9.0 million gallons per day (mgd)

Maximum daily rate: 19.8 million gallons per day (mgd)

Currently actual flows average about 4.5 mgd.

(2) Average and Maximum pressure:

The wells are fed by gravity flow. Pressure is not utilized.

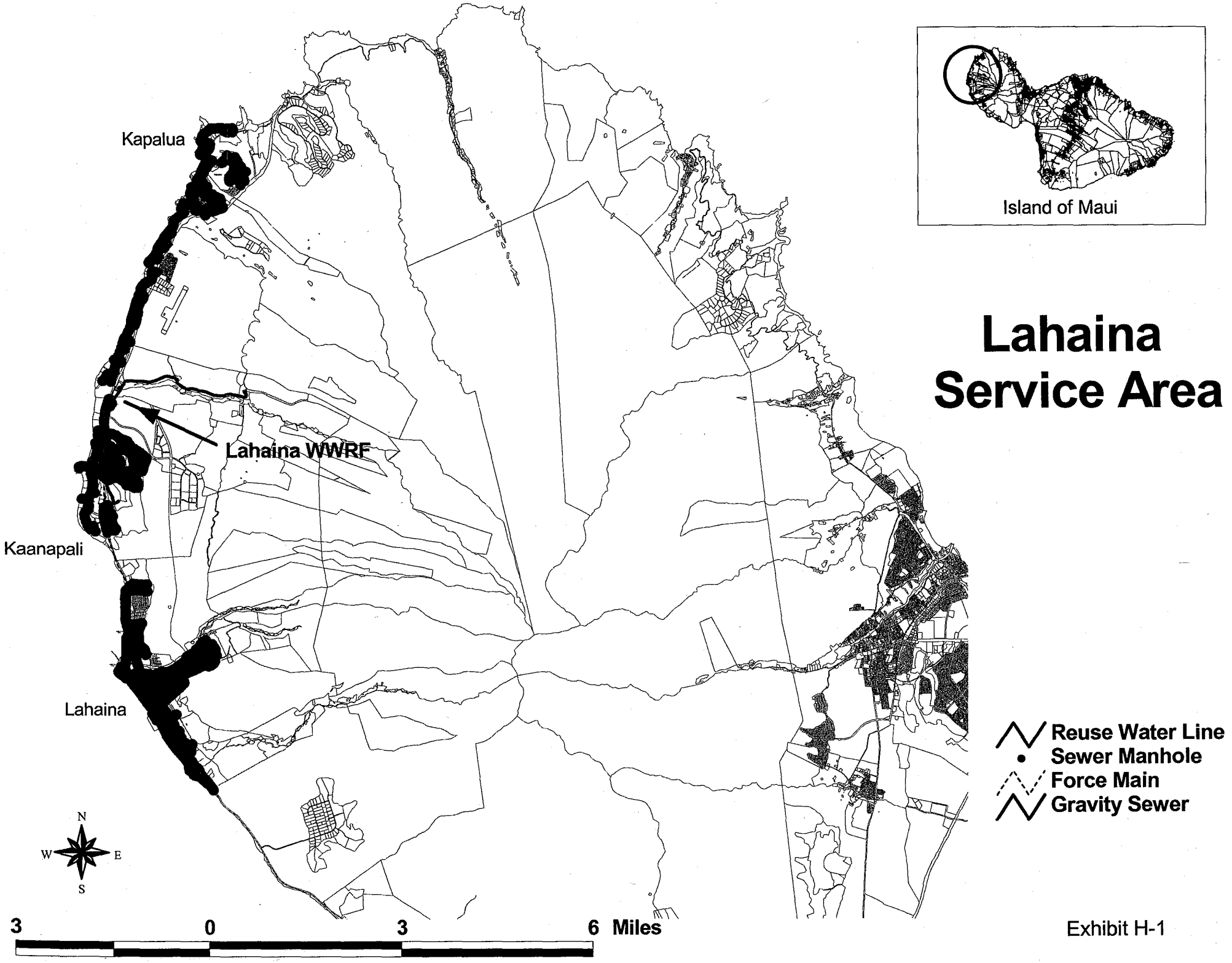
(3) Nature of annulus fluid:

The injected fluid is secondary treated domestic wastewater effluent that is generated by an estimated daily residential population of approximately 40,000 people in residential subdivisions and resort accommodations along with typical supportive light commercial businesses.

Attached are the following Exhibits:

Exhibit H-1: Limits of the service area for the Lahaina WWRF.

Exhibit H-2: Table: Actual flows to Injection wells


Kapalua
Lahaina WWRF
Kaanapali
Lahaina
N
W
E
S
3
0
3
6 Miles
Island of Maui
Lahaina
Service Area
Reuse Water Line
Sewer Manhole
Force Main
Gravity Sewer
Exhibit H-1

LAHAINA WWRF
INJECTION WELL FLOW SUMMARY
November 2003 through October 2004

Million Gallons per Day (mgd)

Date	2003 Oct	Nov	Dec	2004 Jan	Feb	Mar	Apr	May	June	July	August	Sept	Oct
1	4.075	5.020	4.126	8.836	4.478	4.956	4.287	3.983	5.079	3.759	4.508	3.194	4.155
2	3.816	4.219	5.791	10.556	4.247	5.924	4.118	4.320	3.599	3.847	4.345	3.782	3.306
3	3.313	4.260	5.086	8.666	4.075	5.665	4.322	3.746	4.033	3.956	4.552	3.873	3.764
4	3.622	4.290	4.799	7.367	4.140	5.702	3.700	4.485	3.917	4.514	4.670	3.853	4.605
5	3.893	4.000	4.393	6.404	4.366	5.201	5.630	3.976	3.512	3.992	4.183	4.060	3.267
6	3.797	3.961	3.789	6.444	4.277	5.710	4.583	4.617	3.803	4.662	4.275	3.857	3.106
7	3.844	3.788	3.825	5.493	4.462	4.706	4.413	4.192	3.956	3.769	4.447	3.956	3.643
8	4.063	3.825	3.529	5.187	3.957	5.223	4.370	4.141	4.253	4.001	4.853	3.376	3.784
9	3.893	3.698	3.775	5.474	4.239	4.941	4.661	4.573	3.924	4.194	5.028	2.796	3.482
10	4.032	3.587	3.672	5.174	4.359	4.619	5.353	4.785	4.368	4.097	3.654	3.530	4.627
11	4.102	3.587	4.198	5.018	4.285	4.354	5.422	3.481	3.977	4.257	4.465	4.860	3.368
12	4.279	3.899	3.561	5.450	4.947	4.685	5.246	3.722	4.147	3.947	4.203	3.846	4.167
13	4.118	3.543	3.690	4.675	4.170	5.210	4.034	3.834	4.261	4.409	4.102	3.511	3.680
14	4.004	3.586	3.586	5.501	4.772	4.662	5.532	4.044	4.435	4.010	4.373	3.963	3.814
15	4.055	3.662	3.412	5.462	4.685	4.306	4.491	4.979	4.128	4.100	4.635	3.903	4.429
16	3.914	4.493	3.505	4.447	4.663	4.465	4.166	5.044	4.449	5.321	4.112	3.517	3.717
17	4.030	4.044	3.374	4.284	4.526	4.266	4.975	4.691	3.876	2.602	4.674	3.499	3.874
18	3.952	3.704	3.999	4.593	4.861	4.465	3.947	4.106	4.027	4.073	4.107	3.375	4.120
19	4.331	4.415	3.629	4.736	4.557	4.266	4.975	3.711	4.365	4.070	4.470	4.413	3.923
20	3.823	4.422	3.956	4.689	4.181	4.637	3.606	4.353	4.171	4.071	4.445	4.009	3.820
21	4.276	3.441	3.712	4.561	4.490	4.491	4.108	3.548	4.647	4.630	4.058	4.443	3.691
22	4.038	4.206	3.982	5.318	4.640	5.869	4.094	4.725	3.928	3.901	4.416	4.095	4.348
23	3.879	3.877	4.136	5.068	4.521	5.072	4.161	4.215	4.263	3.689	4.189	3.267	3.318
24	4.197	4.018	4.410	4.172	4.236	5.257	4.055	3.961	3.953	4.275	4.172	4.435	3.971
25	4.644	4.560	3.859	4.661	5.033	4.678	4.432	4.060	4.214	4.344	3.768	3.602	4.010
26	4.977	4.616	4.677	4.160	3.980	4.403	4.762	3.864	4.320	3.806	3.928	3.962	4.227
27	3.951	4.956	4.810	4.229	8.407	4.739	4.066	4.097	4.390	4.043	4.032	3.519	4.167
28	4.642	4.024	4.987	3.981	5.911	4.468	4.128	3.926	4.374	3.786	4.065	3.214	3.844
29	4.650	4.226	5.168	3.700	6.946	4.627	3.965	4.149	3.948	4.068	4.047	4.274	3.715
30	4.632	4.126	5.749	6.874		4.287	4.125	4.276	3.778	4.066	3.603	4.155	3.754
31	5.501			4.230				3.910		4.305			4.058
Monthly Total - MG	128.343	122.050	125.185	169.41	136.41	145.854	133.727	129.51	124.095	126.564	128.38	114.139	119.754
Daily - MGD													
Maximum	5.501	5.020	5.791	10.556	8.407	5.924	5.63	5.044	5.079	5.321	5.028	4.860	4.627
Average	4.100	4.100	4.200	5.460	4.700	4.900	4.460	4.200	4.100	4.080	4.300	3.800	3.900
Minimum	3.313	3.441	3.374	3.700	3.957	4.266	3.606	3.481	3.512	2.602	3.603	2.796	3.106
GPM													
Maximum	3,820	3,486	4,022	7,331	5,838	4,114	3,910	3,503	3,527	3,695	3,492	3,375	3,213
Average	2,847	2,847	2,917	3,792	3,264	3,403	3,097	2,917	2,847	2,833	2,986	2,639	2,708
Minimum	2,301	2,390	2,343	2,569	2,748	2,963	2,504	2,417	2,439	1,807	2,502	1,942	2,157

Exhibit H-2

ATTACHMENT M

ATTACHMENT M

Lahaina Wastewater Reclamation Facility
UIC Permit Renewal - Permit No. HI596001

Construction Details:

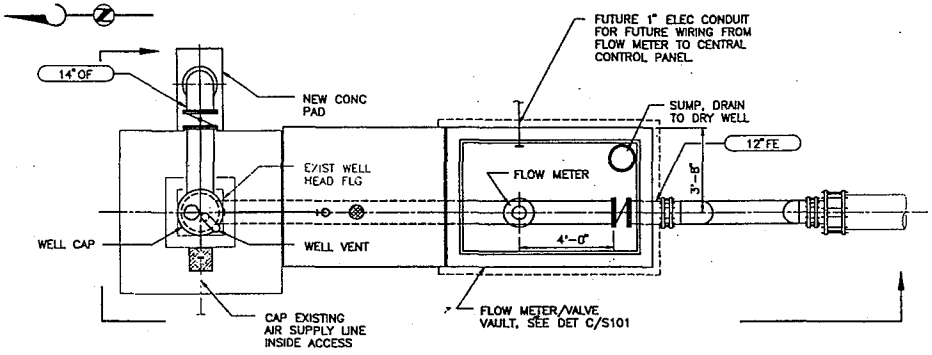
The following table outlines the parameters for each well.

Injection Well No.	**1**	**2**	**3**	**4**
Construction date	1979	1979	1985	1985
Total depth of well (ft)	200	180	225	255
Bottom of well elev.(ft)	-168	-150	-200	-229
Flow meter	McCrometer in-line propeller type			
Solid casing (w/3 ft. stick up)				
Length (ft)	88	88	108	108
Diameter (inches)	20	20	20	20
Material	steel	steel	steel	steel
Perforated casing				
Length (ft)	115	-	-	150
Diameter (inches)	14	-	-	14
Material	steel	-	-	steel
Open hole				
Length (ft)		95	120	-

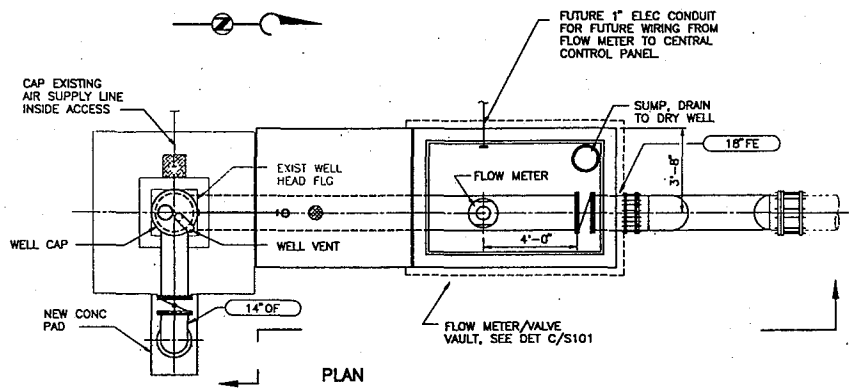
In addition, attached are the following exhibits:

Exhibit M-1: Construction details for the well head construction

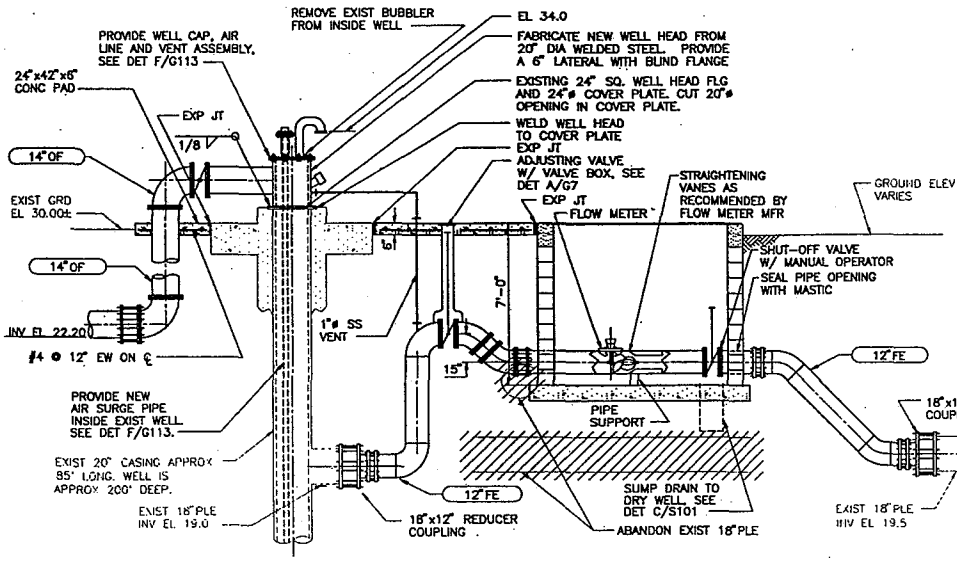
Exhibit M-2: Diagram of Well construction



PLAN



PLAN

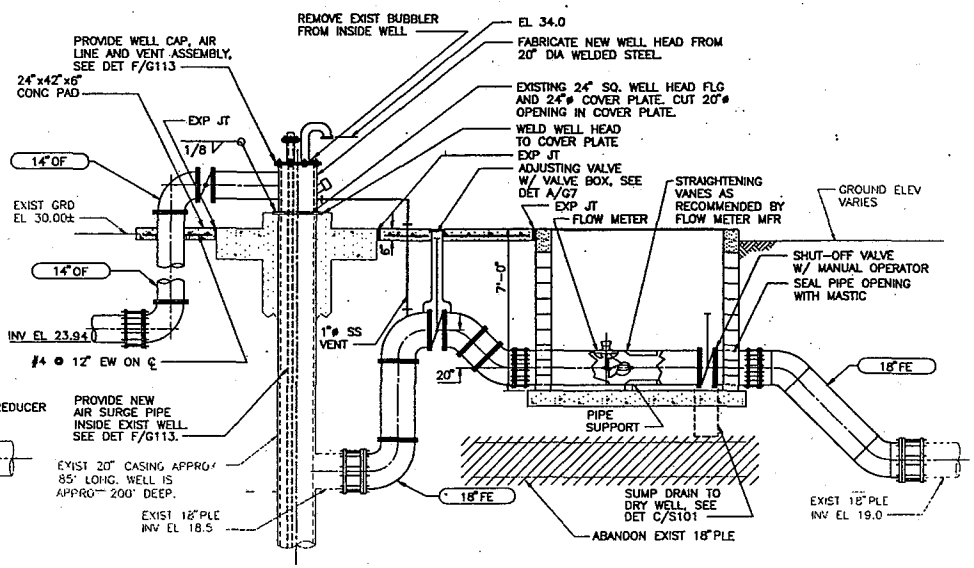


SECTION

MODIFICATIONS TO INJECTION WELL NO.1

DETAIL (A / G101)

SCALE: 3/8" = 1'-0



SECTION

MODIFICATIONS TO INJECTION WELL NO.2

DETAIL (B / G102)

SCALE: 3/8" = 1'-0

GENERAL NOTE:
WORK SHOWN AS "FUTURE" IS TO BE DONE AS PART OF THIS PROJECT AND IS SHOWN IN THE ADDITIONS AND MODIFICATIONS DRAWINGS.

Brown and Caldwell Consultants

SUBMITTED: DATE: 5/15/02
APPROVED: DATE: 5/15/02
APPROVED: DATE:

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2" SCALE ACCORDINGLY)

FILE 5485
DRAWN REJ
DESIGNED KJH
CHECKED JEH/DE
CHECKED LKA/BRM

BILL A. HEDY, REGISTERED PROFESSIONAL ENGINEER, 7729(RD), HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

REVISIONS

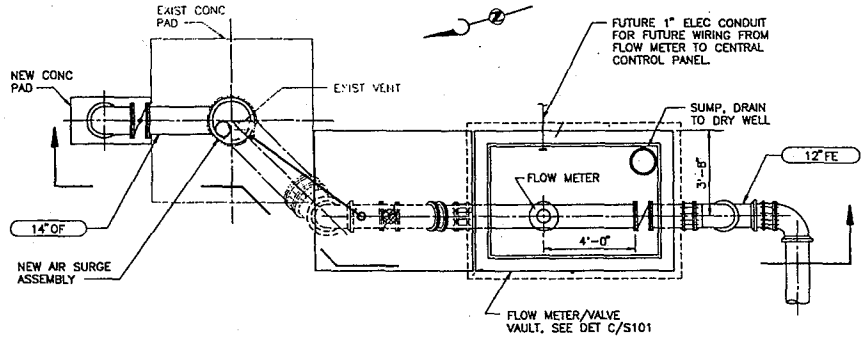
ZONE	REVS	DESCRIPTION	BY	DATE	APP.

DEPARTMENT OF PUBLIC WORKS
COUNTY OF MAUI, HAWAII

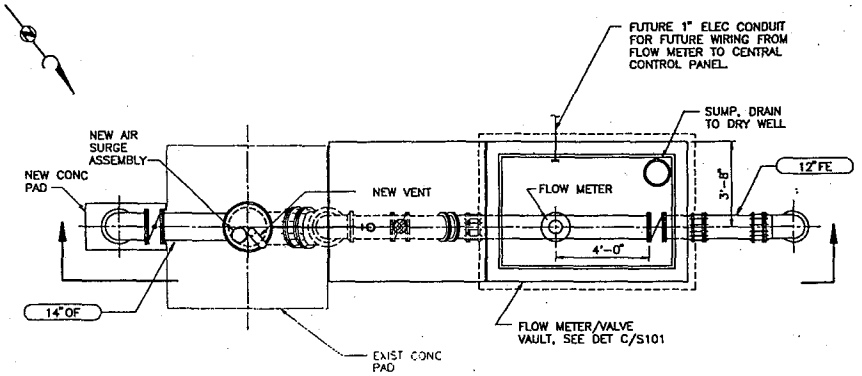
LAHAINA
WASTEWATER RECLAMATION FACILITIES
INJECTION WELLS

WELL PLANS, SECTIONS AND DETAILS-1

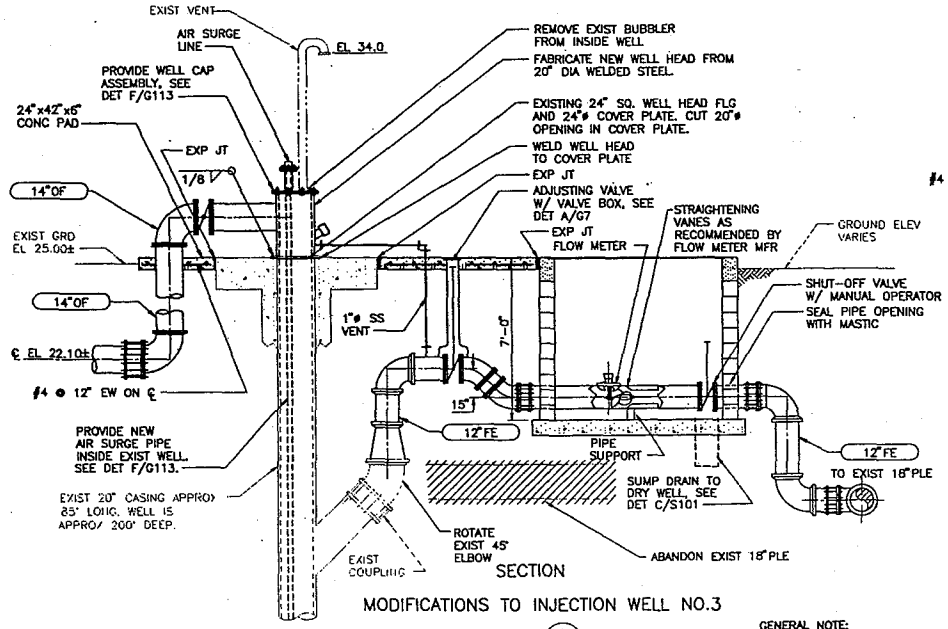
SCALE: AS NOTED
DRAWING NUMBER: G111
SHEET NUMBER: 15 OF 21



PLAN



PLAN

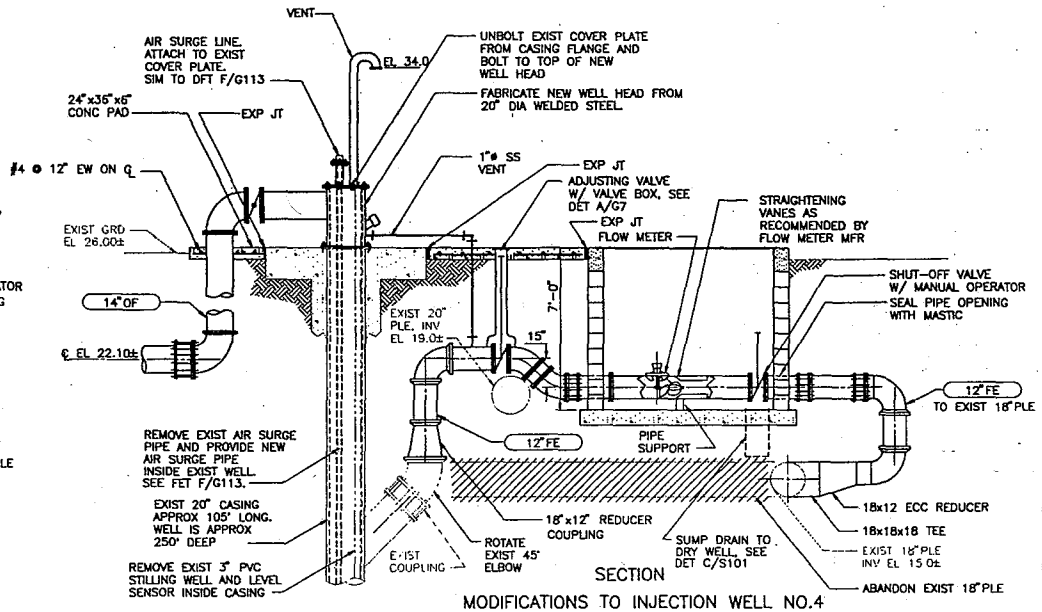


SECTION

MODIFICATIONS TO INJECTION WELL NO.3

DETAIL (A / G103)

SCALE: 3/8" = 1'-0



SECTION

MODIFICATIONS TO INJECTION WELL NO.4

DETAIL (B / G103)

SCALE: 3/8" = 1'-0

GENERAL NOTE:
WORK SHOWN AS "FUTURE" IS TO BE DONE AS PART OF THIS PROJECT AND IS SHOWN IN THE ADDITIONS AND MODIFICATIONS DRAWINGS.

Brown and Caldwell Consultants

SUBMITTED: [signature] DATE: 5/5/92
APPROVED: [signature] DATE: 5/6/92
APPROVED: DATE:

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

FILE 5485
DRAWN REJ
DESIGNED KJH
CHECKED JEH/DE
CHECKED LAK/BRM

BILL R. KELLY REGISTERED PROFESSIONAL ENGINEER 7230(CIVIL) HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

[signature]

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.

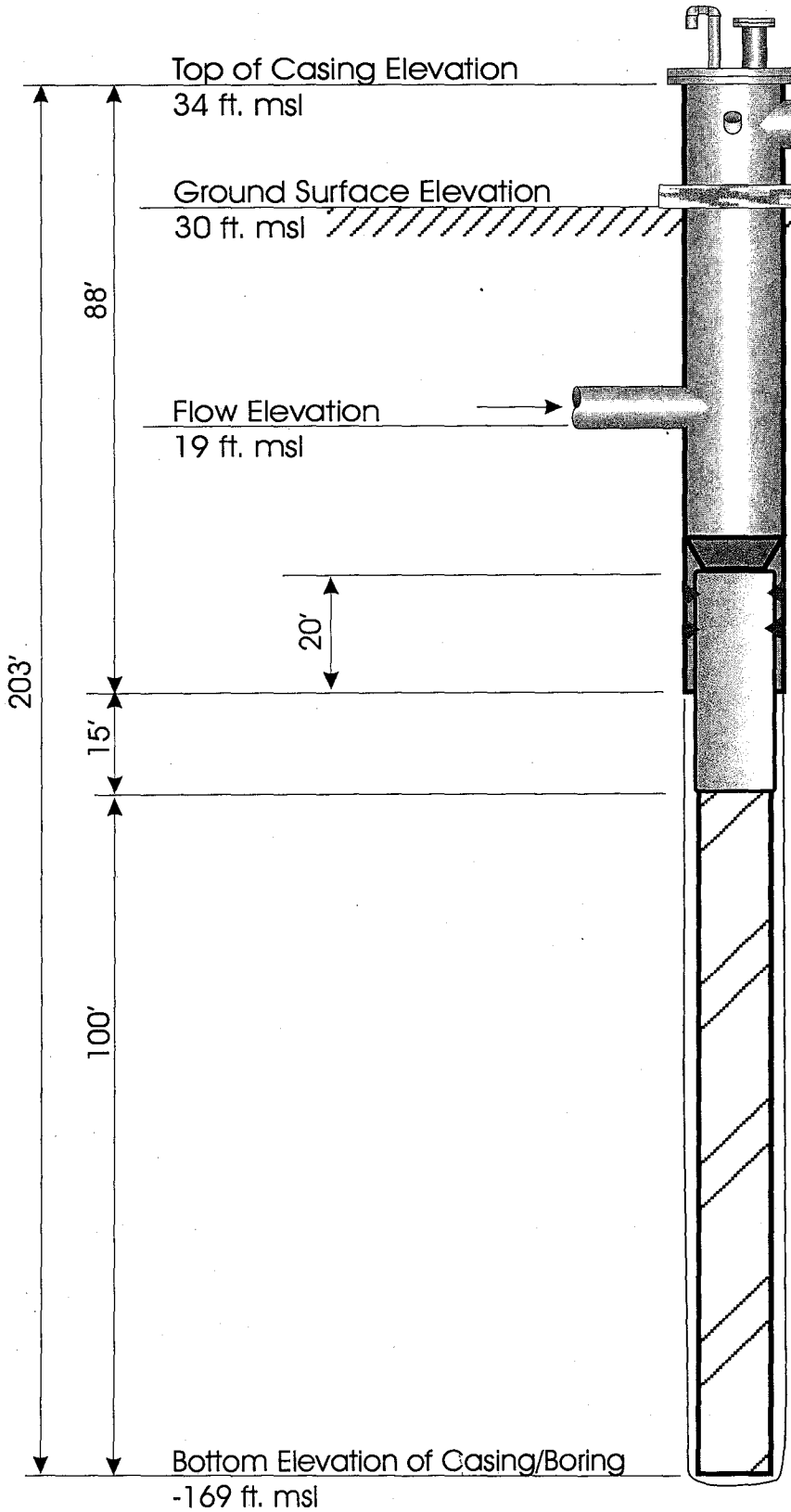
DEPARTMENT OF PUBLIC WORKS
COUNTY OF MAUI, HAWAII

LAHAINA
WASTEWATER RECLAMATION FACILITIES
INJECTION WELLS

WELL PLANS, SECTIONS AND DETAILS-2

SCALE: AS NOTED
DRAWING NUMBER: G112
SHEET NUMBER: 16 OF 21

Lahaina Wastewater Reclamation Facility
Injection Well No.1



Casing stick up 4 L.F.

overflow pipe

Solid Casing
Length: 88 L.F.
Diameter: 20" I.D.
Material: Steel

Neoprene K-Packer Transition

Centralizers 304 SS
3 @ 120° - 2 places

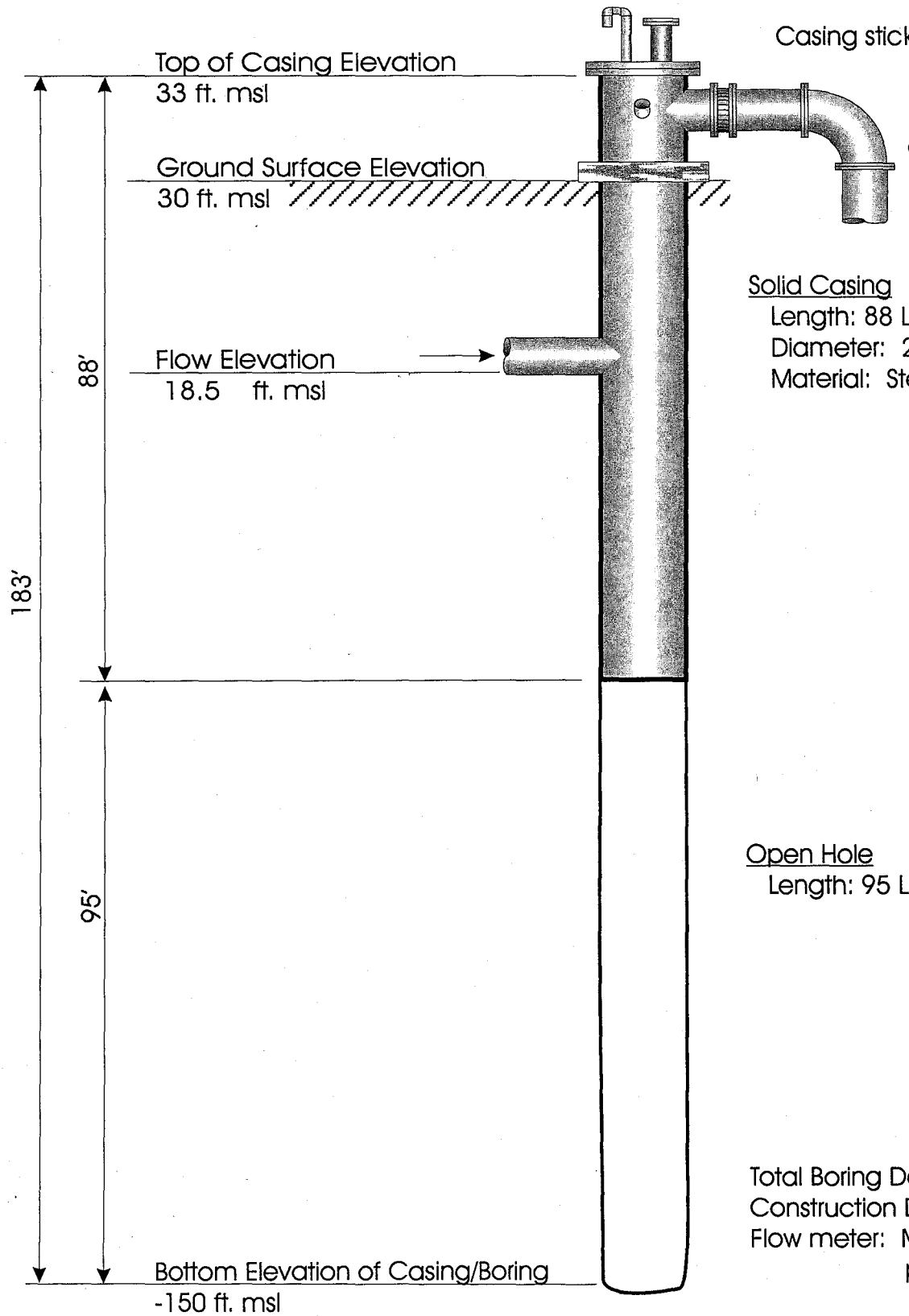
Blank Casing
Length: 35 L.F.
Diameter: 14" I.D.
Wall Thickness: 3/16"
Material: Steel

Perforated Casing
Length: 100 L.F.
Diameter: 14" I.D.
Wall Thickness: 1/4"
Material: Copper Bearing
Fluflo Louver
Openings: 1/4" Slot
120 openings/foot
79 in^2 open/foot

Total Boring Depth 203 L.F.
Construction Date: 1979
Flow meter: McCrometer in-line
propeller type

Exhibit M-2

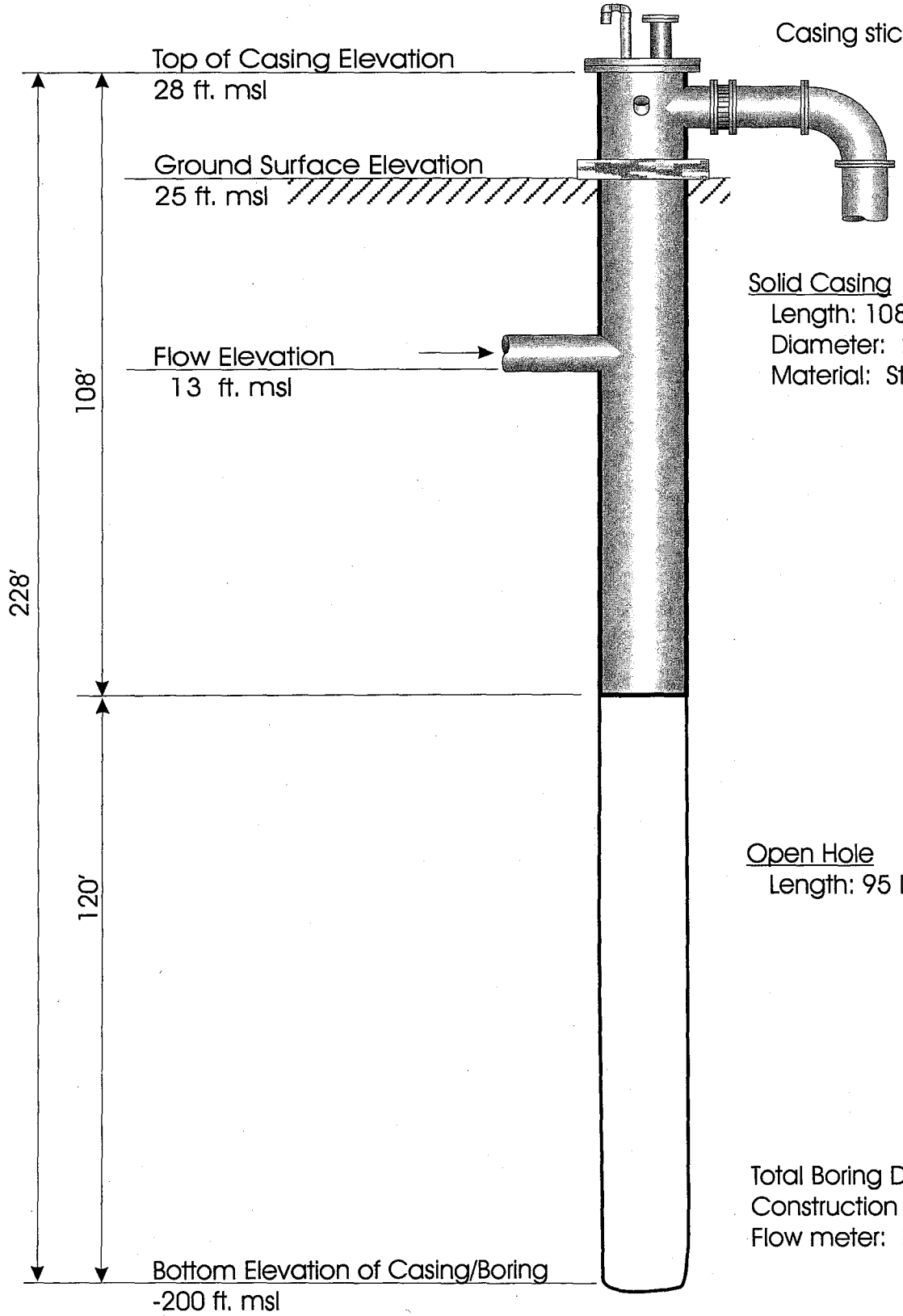
Lahaina Wastewater Reclamation Facility
Injection Well No. 2



Total Boring Depth 180 L.F.
Construction Date: 1979
Flow meter: McCrometer in-line propeller type

Exhibit M-2

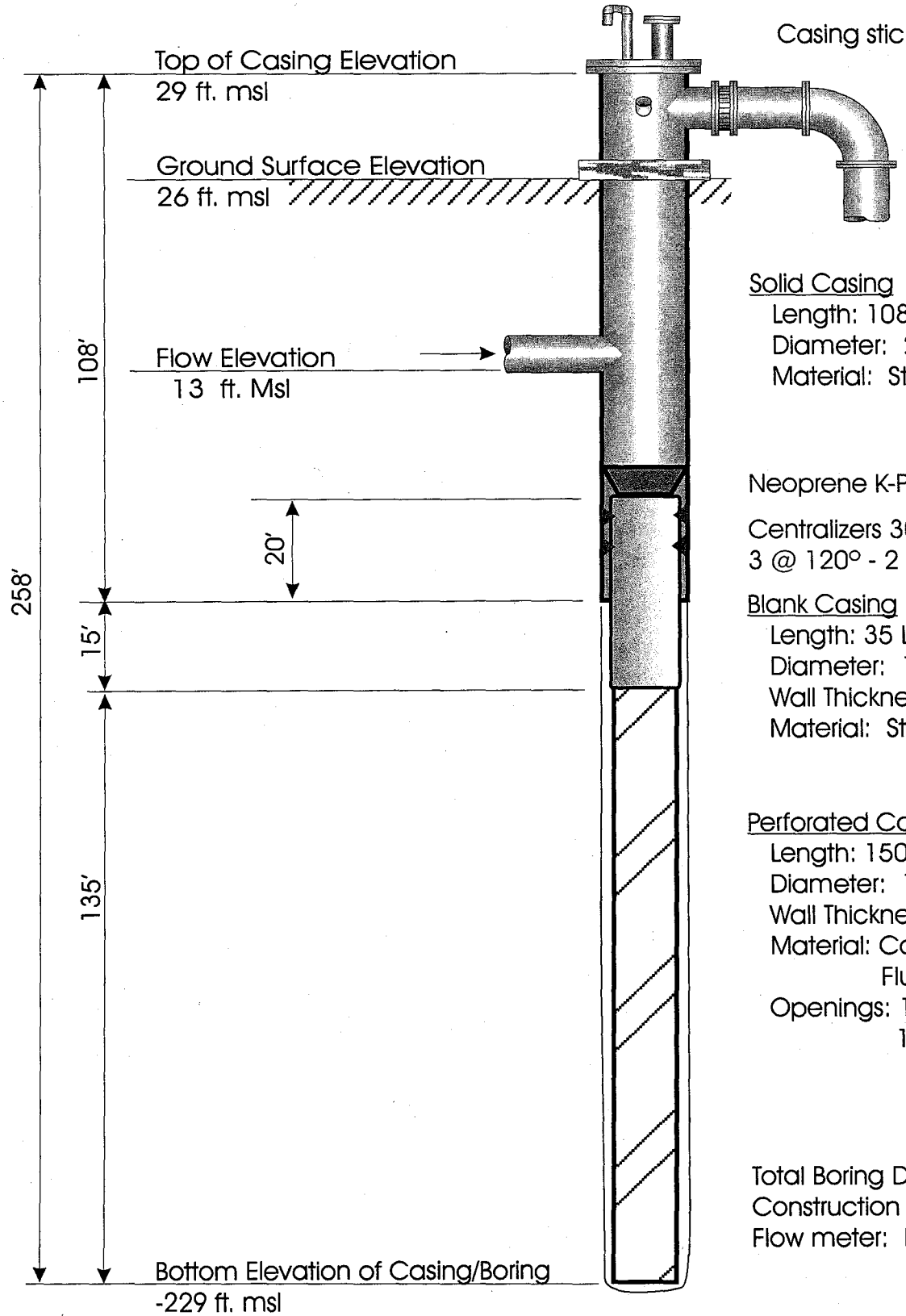
Lahaina Wastewater Reclamation Facility
Injection Well No. 3



Total Boring Depth 225 L.F.
Construction Date: 1985
Flow meter: McCrometer in-line propeller type

Exhibit M-2

Lahaina Wastewater Reclamation Facility
Injection Well No. 4



Casing stick up 3 L.F.

overflow pipe

Solid Casing
Length: 108 L.F.
Diameter: 20" I.D.
Material: Steel

Neoprene K-Packer Transition

Centralizers 304 SS
3 @ 120° - 2 places

Blank Casing
Length: 35 L.F.
Diameter: 14" I.D.
Wall Thickness: 3/16"
Material: Steel

Perforated Casing
Length: 150 L.F.
Diameter: 14" I.D.
Wall Thickness: 1/4"
Material: Copper Bearing
Fluflo Louver
Openings: 1/4" Slot
120 openings/foot
79 in^2 open/foot

Total Boring Depth 255 L.F.
Construction Date: 1985
Flow meter: McCrometer in-line
propeller type

Exhibit M-2

ATTACHMENT P

ATTACHMENT P

Lahaina Wastewater Reclamation Facility
UIC Permit Renewal - Permit No. HI596001

Monitoring Program:

The subject injection wells at the Lahaina Wastewater Reclamation Facility are subject to a permit issued by the Hawaii State Department of Health. This permit (No. UM-1357) was most recently renewed on March 29, 2004 and is valid through March 28, 2009. This permit requires monitoring of injection well injectant (Type I-IV tests), as well as, injection well performance monitoring on a semi annual basis.

In addition the existing EPA UIC permit requires weekly nitrogen analysis. Values have always been significantly below the permit limits.

The following exhibits are attached for your review:

Exhibit P-1: Copy of UIC Permit no. UM-1357

Exhibit P-2: Copy of last Type I-IV testing results

Exhibit P-3: Copy of last semi annual testing report

Exhibit P-4: Copy of last 12 months Nitrogen Analyses

LINDA LINGLE
GOVERNOR OF HAWAII

'04 MAR 18 P2:34

COUNTY OF MAUI
PUBLIC WORKS

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O.BOX 3378
HONOLULU, HAWAII 96801-3378

☐ RUSH
~~March 12~~ 2004

WWRD	INFO	ACTION	DRAFT RESP	SEE ME	COMMENTS	FILE	COPY
CHIEF	✓						
PLANNING						✓	
DESIGN							
ACCOUNTANT							
SECRETARY							
OPERATIONS							✓

By GR Date 3/22
Return to:

RECEIVED
2004 MAR 23 PM 1:38
WASTEWATER
RECLAMATION DIVISION
COUNTY OF MAUI

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

In reply, please refer to:
LHD/SDWB

DEPT. OF PUBLIC WORKS

	INFO	ACTION	SEE ME	COMMENTS	COPY	FILE
DIRECTOR						
DEP. DIR.						
PERS.						
STAFF OE						
LUCA						
WW RECL.	✓					
SOLID W.						
ENGR.						
HWYS.						
SECTY.						

Return to _____ Due _____
Ref. No. _____
By: _____ Date: _____

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Gilbert S. Coloma-Agaran
Director of Public Works and
Environmental Management
County of Maui
200 South High Street
Wailuku, Hawai`i 96793

Dear Mr. Coloma-Agaran:

SUBJECT: LAHAINA WASTEWATER RECLAMATION FACILITY
UNDERGROUND INJECTION CONTROL (UIC)
UIC PERMIT NO. UM-1357

We have completed the review of your UIC permit-renewal application and have determined that the conditions required for the approval to operate four (4) injection wells at the subject facility have been satisfied. Therefore, you are hereby granted approval to operate the four injection wells under the terms and conditions of the enclosed permit.

Your facility and injection wells have retained the following identification numbers:

UIC Permit No. UM-1357
Facility ID No. 6-5641.01
Wells No. 1 through 4

Please refer to the UIC permit number in all future correspondence with this office.

Failure to comply with the terms and conditions of the permit will constitute a violation of the permit. Any person who violates the permit's terms and conditions or any provision of Hawai`i Administrative Rules, Title 11, Chapter 23, Underground Injection Control, as amended, shall be subject to the penalties provided in Section 340E-8, Hawai`i Revised Statutes, as amended.

A guidelines document for an injection well status report has been enclosed for your reference. The guidelines document shall be used as referenced in the UIC permit under "Part I B. Monitoring and Reporting Conditions 1. (g)."

Please review and pay special attention to Part I B. "Monitoring and Reporting Conditions." Under this section, you are responsible for monitoring, record keeping, and reporting conditions. Noncompliance with this section will result in a violation of the UIC permit. Please contact us if you have any questions pursuant to this section.

If you have any questions regarding your permit, or the UIC Program, please contact Norris Uehara of the Safe Drinking Water Branch (SDWB) at 586-4258 (Honolulu) or call from Maui the direct toll free number 984-2400, ext. 64258.

Sincerely,

THOMAS E. ARIZUMI, P.E., CHIEF
Environmental Management Division

NU:nbp

Enclosures: UIC Permit
UIC Injection Well Status Report Guidelines (10/99)

c: 1. Gordon Muraoka, SDWB Sanitarian, Maui (w/o encls.)
2. Shannon FitzGerald
Ground Water Office (WTR-9)
U.S. EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105 (w/o encls.)

STATE OF HAWAI`I
DEPARTMENT OF HEALTH

UNDERGROUND INJECTION CONTROL (UIC)

PERMIT NO. UM-1357

FACILITY IDENTIFICATION NO. 6-5641.01

for

LAHAINA
WASTEWATER RECLAMATION FACILITY

Operated By
Department of Public Works
and Environmental Management
County of Maui

TABLE OF CONTENTS

AUTHORIZATION TO OPERATE UNDER THE
UNDERGROUND INJECTION CONTROL PROGRAM

In compliance with the provisions of the Safe Drinking Water Act, Chapter 340E, Hawai`i Revised Statutes (HRS), as amended, and Hawai`i Administrative Rules, Title 11, Chapter 23, Underground Injection Control, as amended;

LAHAINA WASTEWATER RECLAMATION FACILITY
Operated by
Department of Public Works and Environmental Management
County of Maui

is authorized to operate a Class V, Subclass AB, injection well system consisting of four (4) injection wells as described in Table No. 1, pages 2 and 3;

to dispose of secondary treated domestic wastewater effluent;

located at 3300 HonoaPi`ilani Highway, Honokowai, Lahaina, Maui;

at Tax Key Number: 2nd Division 4-4-02:029

at coordinates: Latitude 20° 56' 55" N and Longitude 156° 41' 25" W;

under Facility Identification Number: 6-5641.01

in accordance with monitoring conditions, and other terms and conditions set forth in Parts I, IL, and III hereof.

This permit becomes effective upon issuance.

This permit and the authorization to operate the four (4) injection wells will expire at midnight, March 28, 2009.

Issued on the 29th day of March 2004.

Thomas L. Arizumi

(For) Director of Health

TABLE NO. 1

Injection Well No.	1	2
Latitude:	20° 56' 55" N	20° 56' 55" N
Longitude:	156° 41' 25" W	156° 41' 25" W
Elevations:		
Ground Surface	30 Feet	30 Feet
Bottom of Well	-170 Feet	-150 Feet
Total Depth of Well Below Ground Surface	200 Feet	180 Feet
Well Cellar:		
Lateral Dimensions	---	---
Depth	---	---
Material	---	---
Solid Casing:		
Diameter	20 Inches	20 Inches
Stick Up	3 Feet	3 Feet
Total Length	88 Feet	88 Feet
Material	Steel	Steel
Perforated Casing:		
Diameter	14 inches	---
Perforation	Slotted	---
Stick Up	---	---
Total Length	115 Feet	---
Material	Steel	---
Open Hole:		
Diameter	---	20 Inches
Total Length	---	95 Feet
Annular Backfill:		
Capping	Concrete	Concrete
Solid Casing	Cement	Cement
Separation	Unknown	Unknown
Perforated Casing	---	---
Open Hole	None	None

TABLE NO. 1
(Continued)

Injection Well No.	3	4
Latitude:	20° 56' 55" N	20° 56' 55" N
Longitude:	156° 41' 25" W	156° 41' 25" W
Elevations:		
Ground Surface	25 Feet	26 Feet
Bottom of Well	-200 Feet	-229 Feet
Total Depth of Well Below Ground Surface	225 Feet	255 Feet
Well Cellar:		
Lateral Dimensions	---	---
Depth	---	---
Material	---	---
Solid Casing:		
Diameter	20 Inches	20 Inches
Stick Up	3 Feet	3 Feet
Total Length	108 Feet	108 Feet
Material	Steel	Steel
Perforated Casing:		
Diameter	---	14 Inches
Perforation	---	Slotted
Stick Up	---	---
Total Length	---	150 Feet
Material	---	Steel
Open Hole:		
Diameter	18 Inches	---
Total Length	120 Feet	---
Annular Backfill:		
Capping	Concrete	Concrete
Solid Casing	Cement	Cement
Separation	Unknown	Unknown
Perforated Casing	---	---
Open Hole	None	None

A. OPERATING CONDITIONS:

1. Injectant Characteristics

Injectant in this permit is limited to secondary treated domestic wastewater effluent, as described in Section 11-62-26 of Title 11, Chapter 62, "Wastewater Systems," from Lahaina Wastewater Reclamation Facility.

2. Injection Limitations and Prohibitions

(a) Injectant in this permit is exclusively limited to the injectant described in Part I A.1. above; furthermore, any injectant not described in Part I A.1. is explicitly prohibited unless the injectant characteristics of this permit are revised accordingly.

(b) No discharge of hazardous wastes as defined by Title 40, Code of Federal Regulations (CFR), Part 261.

(c) Injection Pressure:

Gravity flow of the injectant from Lahaina Wastewater Reclamation Facility into the injection wells.

(d) Disposal Quantity and Rate:

The design average flow of 9,000,000 gallons per day (gpd) for every calendar week shall not be exceeded.

The design maximum disposal quantity of 19,800,000 gallons per day (gpd) for every day shall not be exceeded.

(e) Concentrations of the Injectant

Chemical and physical analyses are required as detailed in Part I B. 1. (c) of this permit to determine the chemical concentration levels and/or the physical nature of the injectant. Furthermore, chemical and physical analyses include analyses that are used to determine compliance to secondary treatment as described in Section 11-62-26 of Title 11, Chapter 62, "Wastewater Systems." Chemical analyses in Part I B. 1. (c) may include analyses that are capable of analyzing the injectant for the characteristics of a hazardous waste, for volatile organic compounds, or for dissolved nutrients associated with the processes of eutrophication.

For the purposes of this section, the arithmetic average of the results of the analyses of composite samples shall be based upon one or more analyses made within a 30 consecutive calendar day period. The arithmetic average shall be the sum of the results of all analyses divided by the number of analyses made during the 30 consecutive calendar day period.

Biochemical Oxygen Demand (BOD_5) shall not exceed 30 milligrams per liter based on the arithmetic average of the results of the analyses of composite samples. In no case shall any grab sample exceed 60 milligrams per liter of BOD_5.

Suspended Solids shall not exceed 30 milligrams per liter based on the arithmetic average of the results of the analyses of composite samples. In no case shall any grab sample exceed 60 milligrams per liter of suspended solids.

Residual chlorine for any grab sample shall not be less than 0.1 milligrams per liter.

Certain chemical and/or physical parameters may be specified in this permit with an Action Level, a Regulatory Level, or both. Regulatory Levels shall not be exceeded. Chemical and/or physical parameters with or without specified Action Levels or Regulatory Levels may be subject to revised concentration levels pursuant to changing concerns related to public or environmental health, safety, or relevant laws and regulations.

An Action Level category is referenced in Table No. 2. The exceeding of an Action Level shall trigger the activity described in Part I B. 1. (e).

B. MONITORING AND REPORTING CONDITIONS:

1. Injectant and Injection Well Monitoring

(a) Injectant samples, measurements, and analyses taken or conducted as required by this permit shall be valid and representative of the volume and nature of the injectant. Pursuant to the monitoring and reporting conditions of this permit, detailed records of the operation of the injection wells shall be kept by the permittee. When applicable, records shall include at a minimum the following information:

(1) Type of injectant.
(2) Quantity of injectant.
(3) The method of injection.
(4) Injection pressure.
(5) The rate of injection.
(6) The operational status of the injection well.
(7) The exact date and time of the measurement or sampling.
(8) The person(s) who performed the measurement or sampling.
(9) The dates the analyses were performed.
(10) The person(s) who performed the analyses.
(11) The analytical techniques or methods used.
(12) The results of all required analyses and permit limits.
(13) Chain of Custody.

(b) A daily record of the injectant quantity (gpd) being discharged into each injection well shall be kept. Injectant quantity recordings shall be continuously made through a direct measurement of the wastestream.

(c) Representative composite and grab samples (four types) as specified on Table Nos. 2, 3, 4, and 5 of the injectant shall be collected from a collection point to be established by the permittee and approved by the Director. The permittee shall collect and analyze the samples and report the analytical results according to the conditions and the Monitoring and Reporting Schedule of this permit. The collection and analysis of the samples shall be conducted by a laboratory acceptable to the Director. If the laboratory is unable to perform the sample collection, the Director may allow the permittee to collect the sample under the direction of the laboratory.

All samples shall be collected, transported, preserved, stored, documented, analyzed, and reported in accordance with EPA or EPA equivalent methods or standards, and all such activities shall be performed properly and satisfactorily in order to produce valid samples and analytical results. The falsification, fabrication, tampering, or improper handling and management of the samples, chain-of-custody form, or analytical results shall be a violation of this permit.

Methods of analysis shall be as stated herein or approved by the Director. The frequency of sample collection and the type of analyses are as described:

Type I Sample:

(1) Type I samples, involving both composite and grab, shall be collected and analyzed at least once every month. A monitoring and reporting schedule is attached that outlines the schedule of analyses and reportings.

(2) Type I samples shall be analyzed for the test parameters listed in Table No. 2.

(3) Type I grab samples shall be collected within the time period of composite sample collection and between the hours of 9 a.m. and 3 p.m.

(4) Type I composite sample procedures shall be established by the permittee and approved by the Director.

(5) The analytical results (Type I) shall be submitted to the Department and a copy shall be kept on file at the facility. Analytical results are due within 60 days from the sampling date. If applicable, for a reporting schedule that indicates a group-of-months submittal of analytical results, the analytical results from the indicated group of months are due within 60 days from the last sampling date of the group.

Type II Sample:

(1) Type II samples, involving both composite and grab, shall be collected and analyzed at least once every six (6) months in conjunction with Type I samples. A monitoring and reporting schedule is attached that outlines the schedule of analyses and reportings.

(2) Type II samples shall be analyzed for the test parameters listed in Table No. 3.

(3) Type II grab samples shall be collected with Type I samples between the hours of 9 a.m. and 3 p.m.

(4) Type II composite sample procedures shall be established by the permittee and approved by the Director.

(5) The analytical results (Type II) shall be submitted to the Department and a copy shall be kept on file at the facility. Analytical results are due within 60 days from the sampling date.

Type III Sample:

(1) Type III samples, grab, shall be collected and analyzed at least once every 12 months in conjunction with Type I and Type II samples. A monitoring and reporting schedule is attached that outlines the schedule of analyses and reportings.

(2) Type III samples shall be analyzed for Ignitability, Corrosivity, Reactivity, and Method 1311: Toxicity Characteristic Leaching Procedure (TCLP) as described in 40 CFR, Part 261, Appendix II. Reference is hereby made to Table No. 4 which lists the test parameters for which the analysis shall be conducted under Method 1311. Regulatory levels of the chemical parameters are listed for reference.

(3) Type III samples shall be collected between the hours of 9 a.m. and 3 p.m.

(4) The analytical results (Type III) shall be submitted to the Department and a copy shall be kept on file at the facility. Analytical results are due within 60 days from the sampling date.

Type IV Sample:

(1) Type IV samples, grab, shall be collected and analyzed at least once every 12 months in conjunction with Type I, II and III samples. A monitoring and reporting schedule is attached that outlines the schedule of analyses and reportings.

(2) Type IV samples shall be analyzed for volatile organic compounds as described in 40 CFR, Part 136, Appendix A, Method 624. Reference is hereby made to Table No. 5 which lists the test parameters and the analytical methods.

(3) Type IV samples shall be collected between the hours of 9 a.m. and 3 p.m.

(4) The analytical results (Type IV) shall be submitted to the Department and a copy shall be kept on file at the facility. Analytical results are due within 60 days from the sampling date.

(d) The collection of Type III and Type IV samples shall be witnessed by departmental personnel unless a waiver to this condition is granted by the Director. The permittee shall notify the Department at least seven (7) days prior to the date of sample collection for this phase of analysis. Any Type III and Type IV samples that are collected without the acknowledgement and inspection by departmental personnel, unless waived by the Director, will not serve to comply with the monitoring and reporting conditions of this permit.

(e) As this condition may be applicable to this permit, whether specified now or specified later under a revision to this permit, every exceeding of an Action Level or Regulatory Level concentration shall prompt an immediate (within five days from the time of knowledge of the initial analytical results) resampling for and reanalysis of the particular exceeding test parameter. If a Risk-Based Corrective Action or an Oily Wastewater-related action level is exceeded, the reanalysis shall be conducted by using the same method. If a TCLP-related action level is exceeded, the reanalysis shall be conducted by using Method 1311: TCLP as described in 40 CFR, Part 261, Appendix II. If a TCLP regulatory level is exceeded, the reanalysis shall be conducted by using the same method.

The permittee shall immediately notify the Department of every exceeding of an Action Level or Regulatory Level concentration and shall submit the original and follow-up analytical results. The Department may impose additional conditions on resampling and reanalysis.

(f) A periodic recorded inspection of the injection well system at least once every week shall be conducted by the permittee. The inspection shall include the recordation of the operational status of the injection well system to detect any deterioration of the injection well system and associated operations that might lead to an injection well failure, and provide the opportunity to correct any occurrence of prohibited discharge activity. The person conducting the periodic inspection shall be knowledgeable of what is unlawful disposal of chemical compounds, petroleum products and other hazardous substances into the injection well. If such activities are encountered, the permittee shall take immediate action to alleviate, correct, clean up, and record such disposal incidents. The recorded inspection including any disposal incidents shall be kept at the facility and be made available for inspection by departmental personnel.

(g) A periodic status report shall be completed at least once every 6 months regarding the condition and performance of the injection well system. The status report shall be made by a professional consultant, engineer, or geologist proficient in injection well performance. The status report shall document the condition and performance of the injection well system in accordance with the Department's guidelines for an injection well status report. Field inspections and observations for the status report shall be performed at least during the last month of the 6-month monitoring period. A monitoring and reporting schedule is attached that designates the last months of the monitoring periods. The status report shall be submitted to the Department for review within 45 days after the end of the designated monitoring period.

(h) Under applicable conditions, the Director shall have the right to order and direct the permittee to collect and analyze special or unscheduled samples of the injectant or substance in the injection well, or to perform injection well performance or mechanical integrity assessments. Applicable conditions consist of, but are not limited to, accidental discharges, malicious discharges, and undefined discharges into the injection well, as well as indications that the injection well may be under performance or mechanical integrity deterioration. The permittee is required to maintain records of the sample collection, analysis, and assessment in conformance with Part I B. 1. (a) of this permit.

2. Accurate, Current, and Representative Information

The submission of records, analytical results, recorded inspections, status reports, and any other reportings as specified and required by this permit shall be truthful, accurate, current, and representative of the activity being monitored within the specified time frame for monitoring. The submission of false, inaccurate, noncurrent, and/or unrepresentative records, results, inspections, reports, and any other required information, or the nonsubmission of the required materials, is a violation of this permit.

3. Reporting of Noncompliance of Injectant Concentrations

The permittee shall notify the Department of any exceedings of or noncompliance with the concentrations or limitations specified in Part I A. 2. Injection Limitations, as determined by the monitoring and analyses specified in this permit. The notification shall consist of a report that shall include the analytical results and an explanation for the exceeding or noncompliance. The report shall be submitted to the Department within fifteen (15) days of knowledge of the exceeding or noncompliance.

4. Additional Monitoring and Reporting

If the operation of the injection wells is additionally regulated by other pollution control programs, e.g., National Pollutant Discharge Elimination System (NPDES), the adherence to those monitoring and reporting conditions shall not be circumvented by the terms and conditions of this permit.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed, and the calibration and maintenance of applicable facility instrumentation, shall be retained on site for a minimum of three (3) years from the date of procurement and shall be made available for inspection by departmental personnel. This period may be extended by the request of the Director at any time.

6. Anticipated Changes

The permittee shall give notice a minimum of 60 days in advance to the Department of any planned changes in the facility or facility's activity which may significantly change any operating characteristics or specifications of the injection wells; or which may result in noncompliance with the permit conditions. Advance notice shall be of sufficient time to allow for the Department's evaluation of planned changes and revision, if necessary, of any term or condition of this permit. Changes, modifications, revisions or construction on the operating characteristics or specifications of the injection wells shall not be implemented unless approved by the Director.

7. Advance Notification of Change in Operator, Ownership, Control, or Facility Name

In the event of a pending change in operator (permittee), ownership, control, or facility name of the injection wells, the permittee shall report the pending change to the Department in writing at least 90 days prior to the closing. Until such time that this permit is revoked and/or reissued, the permittee of record shall be responsible for the injection wells and injection well operations, and for any damages resulting from the injection wells and operations.

The permittee of record shall notify the pending operator and/or owner in adequate time in order for the pending operator/owner to apply to the Department, using a change-of-operator application, to obtain this permit in coordination with closing. Upon satisfactory completion of the change-of-operator application, this permit may be reissued to the new operator of the injection well facility.

8. Twenty-Four Hour Reporting

Under any of the following conditions, an oral report is required within 24 hours from the time the permittee becomes aware of the circumstances:

(a) Monitoring, or other information, which indicates that the injection activity is causing or could cause an endangerment to a USDW;

(b) Malfunction of the injection system which causes or could cause fluid migration into, out of, or between geologic formations via the well bore;

(c) Overflow of the injection well;

(d) Discharge into the injection well of prohibited chemical compounds, hazardous wastes, or unauthorized substances;

(e) Impairment of the injection well including and not limited to a collapsed well casing or well bore, well bore obstruction, lost well, or damage to the well resulting in a loss of use; or

(f) Unsafe working or public conditions resulting from the operation of the injection well.

A written report shall also be submitted within five (5) days of the time the permittee becomes aware of the circumstances. The written report shall contain a description of the incident and its cause, including exact dates and times, and if the incident has not been mitigated, the anticipated length of time that it is expected to continue; also, planned or accomplished measures to reduce, eliminate and prevent the reoccurrence of the incident.

Oral reports during the weekday hours of 7:45 a.m. to 4:30 p.m. shall be made to the Safe Drinking Water Branch at (808)586-4258 (Honolulu) or call from Maui the direct toll free number 984-2400, ext. 64258. For on-island oral reports, the Safe Drinking Water Branch's district sanitarian may be notified at (808) 984-8234. For evenings, weekends and holidays, all calls shall be made to (808)247-2191 (Honolulu). The Director may waive the written report and/or the 5-day reporting time limit on a case-by-case basis if the oral report proves satisfactory in meeting the reporting requirements of the written report.

A record shall be kept by the permittee of all incidences subject to oral reporting under this section. Record keeping shall minimally include the nature and cause of the incident, date, time, duration, name of reporting person, and mitigative action.

9. Definitions

(a) The "Department" means the Department of Health, State of Hawai`i.

(b) The "Director" means the Director of Health or a duly authorized representative.

(c) "Facility or activity" means any UIC "injection well" or any other facility or activity that is subject to regulation under the UIC Program.

(d) "Fluid" means any material or substance which flows or moves whether in a semisolid, liquid, sludge, gas or any other form or state.

(e) "Injection Pressure" means the head increase in the well bore with respect to static groundwater level.

(f) "Injection Well" means a well into which subsurface disposal of fluid or fluids occurs or is intended to occur by means of injection.

(g) "USDW" means "underground source of drinking water" as defined in Chapter 11-23.

(h) "Well" means a bored, drilled or driven shaft, or a dug hole, whose depth is greater than its widest surface dimension.

A. MANAGEMENT CONDITIONS:

1. Change in Discharge

All operation of wells authorized herein shall be consistent with the terms and conditions of this permit. The operation of any well identified in this permit at volumes or concentrations in excess of that authorized shall constitute a violation of the permit conditions. Any anticipated facility changes including expansions, production increases, or process modifications which would result in new, different, or increased discharges of injectant shall be reported by submission of a UIC application. If such changes are not expected to violate the injection limitations specified in this permit, such changes may be submitted to the Department in writing instead of a UIC application, whereby the Department will determine if a UIC application would be necessary. Following the written submission of anticipated changes or the submission of a UIC application, this permit may be revoked or modified to specify and limit any injectant not previously authorized by this permit.

2. Signatory Statement

All reports or information submitted to the Department pursuant to this permit shall be signed by the permittee.

3. Availability of Reports

All reports prepared in accordance with the conditions of this permit shall be available for public inspection, with the approval of the Director, at appropriate offices of the Department. Permit applications, permits, and well operation data shall not be considered confidential.

4. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all systems of treatment and control, and related appurtenances, which are installed or used by the permittee to operate the injection wells and to achieve compliance with the conditions of this permit. Proper operation and maintenance include and are not limited to sound engineering principles and practices, effective performance, adequate funding, adequate operator staffing and training, adequate laboratory and process controls, and appropriate quality assurance procedures. Furthermore, effective performance means and is not limited to no contamination of a USDW, no unintended subsurface fluid migration, no injection well overflow, no prohibited discharges, no loss or excessive sedimentation of the injection well, and no creation of unsafe working or public conditions.

5. Permit Reapplication

If the permittee desires to continue an activity regulated by this permit after the expiration date of this permit, reapplication shall be made on appropriate application forms then in use. This reapplication shall be made not later than 180 days before this permit expires in order to facilitate processing of the renewal.

6. Permit Extension

The Director may grant an administrative extension to this permit to authorize the continued operation of the injection wells beyond the permit's expiration date. The administrative extension will at a minimum describe the duration of the administrative extension and the conditions under which the administrative extension is granted.

7. Injection Well Abandonment

Every injection well that is not performing its intended purpose or is determined to be a threat to the groundwater resource shall be abandoned when ordered by the Director.

The permittee who wishes or is ordered to abandon an injection well shall submit an application containing the details of the proposed abandonment at least 60 days before the anticipated start of backfilling work. The Department will review the application and may specify that the injection well be backfilled in a manner which would not allow the infiltration or movement of fluid into, out of, or throughout the well bore. The Department will specify abandonment procedures and provide information for the permittee to complete the Abandonment of Injection Well Summary Report upon completion of backfilling. Abandonment procedures shall also comply with any other applicable regulations including those of the Department of Land and Natural Resources.

B. GENERAL CONDITIONS

1. Operating Conditions

(a) No injection well shall be operated, kept, or otherwise utilized without an active UIC permit issued by the Department.

(b) No person shall construct, operate, maintain, convert, backfill, seal, abandon or conduct any other injection activity in a manner which allows the movement of fluid containing a contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water rule or may otherwise adversely affect the health of one or more persons.

(c) The injection wells shall be operated in such a manner that they do not violate any of Hawai`i Administrative Rules, Title 11, regulating various aspects of water quality and pollution, and Chapter 342, HRS. The rules include:

(1) Chapter 11-20, Potable Water Systems.
(2) Chapter 11-55, Water Pollution Control.
(3) Chapter 11-62, Wastewater Systems.

(d) If at any time the Department learns that an injection well may cause a violation of primary drinking water rules, the Director shall order the permittee to take such actions as may be necessary to prevent the violation, including, where required, cessation of operation of the injection well.

(e) Notwithstanding any other condition of this section, the Director will issue an order to immediately cease and desist injection upon receipt of factual information that the injectant has caused or is likely to cause imminent and substantial danger to the health of a person or persons due to contamination of a drinking water source.

2. Permit Issuance

A copy of this permit shall be retained by the permittee and shall be made available for inspection by departmental personnel.

This UIC permit shall not be transferable from the permittee to any other person.

This UIC permit shall be subject to revocation, suspension or revision by the Director if, after notice and opportunity for a contested hearing, it is determined that:

(a) There is a violation of any term or condition of the UIC permit; or

(b) The UIC permit was obtained by misrepresentation, or failure to fully disclose all relevant facts; or

(c) The UIC permit was willfully defaced, altered, forged or falsified; or

(d) There exists a legal, environmental, or public health condition that requires either a temporary or permanent reduction or elimination of the permitted injection; or

(e) There is a failure to comply with Chapter 11-23 or any other applicable rules or laws.

All permit conditions will remain in effect despite the filing of a request by the permittee for a permit revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance.

3. Permit Modification

Any modification, alteration, or change to this permit shall be made only by written supplement or reissuance of the permit by the Department.

4. New Rules and Regulations

The occurrence of new rules and regulations affecting underground injection, typically occurring as amendments to existing rules and regulations, may require that limitations or conditions within the permit be revised accordingly. Revisions to the permit, depending on the nature of the revision, may occur as a written supplement or an administrative reissuance of the permit, or it may require that the permit be reopened, via an application, before reissuance is accomplished.

Existing limitations and conditions within the permit shall not be grounds for superseding new rules and regulations that would otherwise warrant a revision of the permit. The responsibility for knowing about and understanding new, as well as existing, rules and regulations that affect the permit is upon the permittee.

5. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

6. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

7. Right of Entry

Departmental personnel shall have the right to enter premises on which any injection well system is located; to inspect any equipment, operation, or sampling of any injection well system; to take effluent or injectant samples from any injection well system; and to have access to and copy any record required to be kept pursuant to this permit.

8. Need to Halt or Reduce an Activity Not a Defense

It shall not be a defense for a permittee to claim in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9. Penalties

It shall be a violation of Chapter 11-23 for any person, owner or operator of an injection well to construct, operate, maintain or abandon that injection well unless authorized in writing by the Director. It shall also be a violation of Chapter 11-23 for any permittee to fail to comply with the terms and conditions of this permit including those relating to inspection, monitoring, record keeping, and reporting. Compliance with a corrective order shall not excuse the basic violation. Any person who violates any provision of Chapter 11-23 or the terms and conditions of this permit shall be subject to the penalties provided in section 340E-8, HRS or section 11-23-22, HAR.

10. Severability

The conditions of this permit are severable; if any condition of this permit or the application of any condition of this permit to any circumstance is held invalid, the application of such condition to other circumstances and the remainder of this permit shall not be affected thereby.

A. OTHER CONDITIONS:

1. Modifications to Monitoring and Reporting

This permit herein acknowledges that environmental and facility operating conditions affecting the monitoring and reporting conditions of this permit could warrant the Department's reevaluation of permit conditions in order to address changing concerns and to establish relevant analyses. Modifications to the monitoring and reporting conditions, resulting from reevaluations, shall be approved by the Director before implementation.

TABLE NO. 2

TEST PARAMETERS FOR TYPE I SAMPLE

Parameter	Regulatory Level (mg/l)	EPA Method	Sample Type
Biochemical Oxygen Demand (BOD_5)	30	405	Composite
Field pH		150	Grab
Total Residual Chlorine	0.1 minimum	330	Grab
Total Suspended Solids	30	160	Composite
Turbidity		180	Composite

TABLE NO. 3

TEST PARAMETERS FOR TYPE II SAMPLE

Parameter	Action Level	EPA Method	Sample Type
Ammonia (as N)		350	Composite
Dissolved Oxygen		360	Grab
Fecal Coliform		MPN or MF	Grab
Field Temperature		170	Grab
Nitrate-Nitrite (as N)	*	353	Composite
Oil and Grease		413 or 1664	Grab
Orthophosphate (as P)		365	Composite
Total Dissolved Solids		160	Composite
Total Kjeldahl Nitrogen (as N)	*	351	Composite
Total Phosphorous		365	Composite

* 10 mg/l Total Nitrogen where Total Nitrogen equals Total Kjeldahl Nitrogen plus Nitrate-Nitrite Nitrogen.

TABLE NO. 4

TEST PARAMETERS FOR TYPE III SAMPLE

Parameter	Regulatory Level (mg/l)	Method	Sample Type
		As described in 40 CFR (1998):	
Ignitability		Part 261.21	Grab
Corrosivity		Part 261.22	Grab
Reactivity		Part 261.23	Grab
Inorganics:		Method 1311 (TCLP), with appropriate methods of analyses contained in SW-846	Grab
arsenic	5.0		
barium	100.0		
cadmium	1.0		
chromium	5.0		
lead	5.0		
mercury	0.2		
selenium	1.0		
silver	5.0		
Organics:		1311	
benzene	0.5		
carbon tetrachloride	0.5		
chlordane	0.03		
chlorobenzene	100.0		
chloroform	6.0		
o-cresol	200.0		
m-cresol	200.0		
p-cresol	200.0		
1,4-dichlorobenzene	7.5		
1,2-dichloroethane	0.5		
1,1-dichloroethylene	0.7		
2,4-dinitrotoluene	0.13		
heptachlor	0.008		
hexachlorobenzene	0.13		
hexachloro-1,3-butadiene	0.5		
hexachloroethane	3.0		
methyl ethyl ketone	200.0		
nitrobenzene	2.0		
pentachlorophenol	100.0		
pyridine	5.0		
tetrachloroethylene	0.7		
trichloroethylene	0.5		
2,4,5-trichlorophenol	400.0		
2,4,6-trichlorophenol	2.0		
vinyl chloride	0.2		
endrin	0.02		
lindane	0.4		
methoxychlor	10.0		
toxaphene	0.5		
2,4-D	10.0		
2,4,5-TP (silvex)	1.0		

TABLE NO. 5

TEST PARAMETERS FOR TYPE IV SAMPLE

Parameter	Method	Action Level (mg/l)	Sample Type
Volatile Organics	524/624/8240/8260		Grab
Acetone			
Benzene			
Bromodichloromethane			
Bromoform			
Bromomethane			
Carbon Tetrachloride			
Chlorobenzene		0.10 (a)	
Chloroethane			
2-Chloroethylvinyl ether			
Chloroform			
Chloromethane			
Dibromochloromethane			
1,2-Dichlorobenzene			
1,3-Dichlorobenzene			
1,4-Dichlorobenzene			
1,1-Dichloroethane			
1,2-Dichloroethane			
1,1 Dichloroethylene			
trans-1,2-Dichloroethene			
1,2-Dichloropropane			
cis-1,3-Dichloropropene			
trans-1,3-Dichloropropene			
Ethyl benzene		0.14 (a)	
Methylene chloride		0.0043 (a)	
1,1,2,2-Tetrachloroethane			
Tetrachloroethene		0.145 (a)	
Toluene		2.1 (a)	
1,1,1-Trichloroethane		6.0 (a)	
1,1,2-Trichloroethane			
Trichloroethene		0.70 (a)	
Trichlorofluoromethane			
Vinyl Chloride		0.002 (a)	
Xylene		10.0 (a)	

(a) Risk-Based Corrective Action
(b) Oily Wastewater Related

MONITORING AND REPORTING SCHEDULE

UIC PERMIT NO. :

UM-1357

PERMIT ISSUED:

03/29/2004

PERMIT EXPIRES:

03/28/2009

\ SCHEDULED

COMPLETED

MONTH	TYPE I	TYPE II	TYPE III/IV	REPORT OF ANALYTICAL RESULTS ★	STATUS REPORT	MONTH	TYPE I	TYPE II	TYPE III/IV	REPORT OF ANALYTICAL RESULTS ★	STATUS REPORT
04/04	\					04/07	\				
05/04	\					05/07	\				
06/04	\	\		\		06/07	\	\		\	
07/04	\				\	07/07	\				\
08/04	\					08/07	\				
09/04	\					09/07	\				
10/04	\					10/07	\				
11/04	\					11/07	\				
12/04	\	\	\	\		12/07	\	\	\	\	
01/05	\				\	01/08	\				\
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REVISED 5/31/2004 SE

★ Submit original laboratory report with chain of custody form for the scheduled month's analyses within 60 days after the end of the designated monitoring period.

UIC INJECTION WELL STATUS REPORT GUIDELINES

October 1999

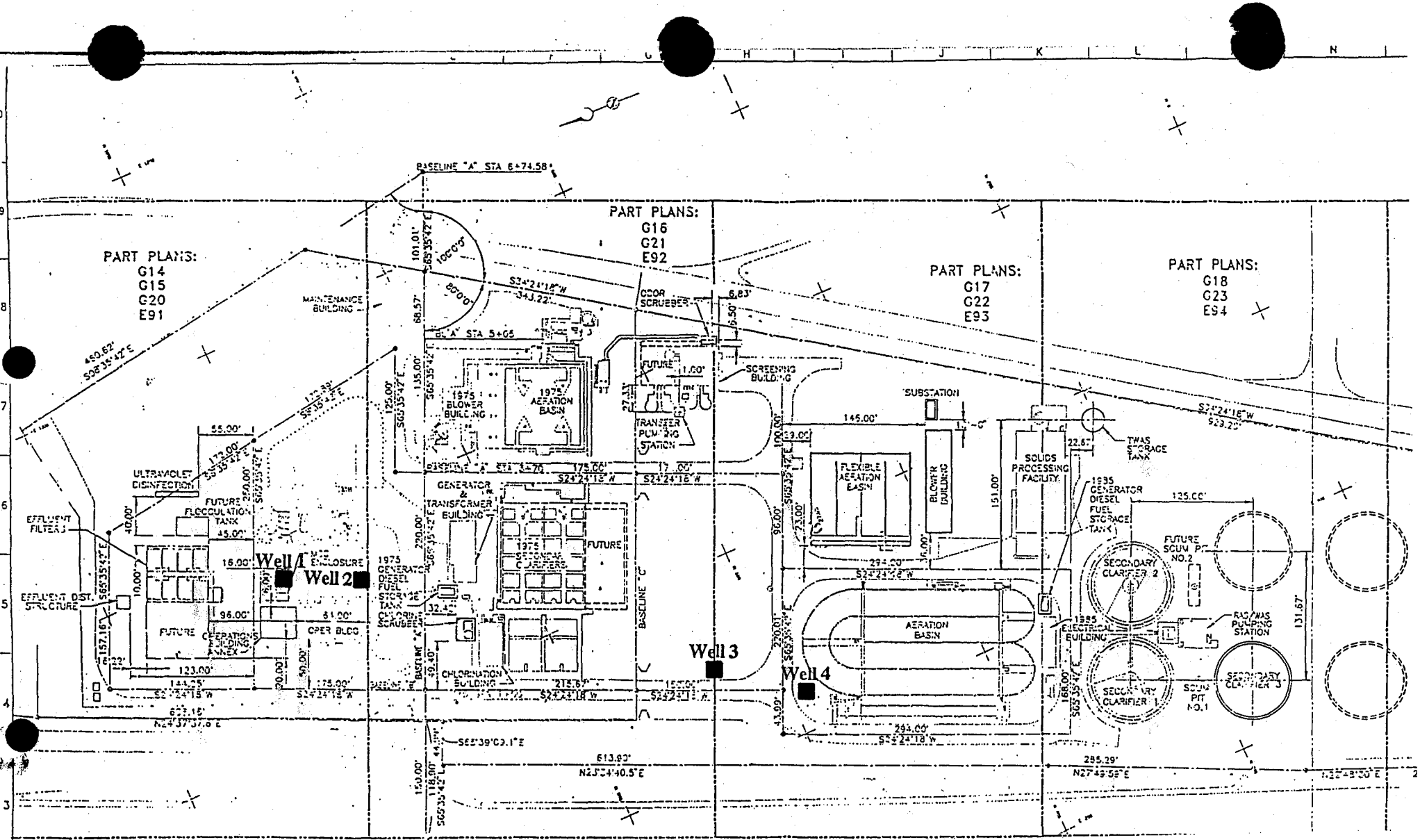
The following guidelines have been established to provide the consulting engineer, geologist, or qualified specialist with information for the preparation of an injection well status report. The primary purpose of the status report is to provide the owner, the operator, and the regulatory agency with information regarding the performance of the injection well and to prevent adverse public health effects from an injection well failure. Every injection well of an injection well system shall be evaluated. Field inspections and observations for the status report shall be performed at least during the last month of a designated monitoring period. A typical designated monitoring period is 6 months. The reporting of data in the status report is preferred using tables and graphs. The status report must be signed by the preparer.

1. The status report shall state the monitoring period for which the report applies. The monitoring period is designated in the Underground Injection Control (UIC) permit issued to an injection well facility.

2. The status report shall contain an evaluation of the flow versus head build-up or injection pressure for every injection well in use. The evaluation should also include, when relevant, correlations using other well-performance parameters that would enhance the evaluation of well performance. Other well-performance parameters include the amount of sedimentation in a well, injectant quality, and duration of well use. Well-performance trends and projections should be sought.

3. The status report shall contain the current field-measured well depth of each injection well. A table shall be used to compile and compare well depth measurements of current and previous measurements taken.

4. The status report shall contain and not be limited to a summary of injection well cleaning events (rehabilitation), a description of the cleaning method, and the results of the cleaning effort.



BENCHMARK: BM. A SET WEST OF HONOAPIILANI HIGHWAY AT SOUTH END OF PLANT WITH ELEVATION OF 19.82 FEET ABOVE MEAN SEA LEVEL BASED ON U.S.C&GS DATUM.

BASIS OF THE SITE GRID: SITE GRID SET AT BM. A WITH GRID LINES BASED ON HAWAII STATE PLANE SYSTEM REFERENCED TO TRIANGULATION STATION "LAINA" THE SOUTHEAST PROPERTY CORNER HAS COORDINATES OF N16,957.75, E6,779.95 IN THE HAWAII STATE PLANE COORDINATE SYSTEM.

PROPERTY LINE (S): PROPERTY LINES ARE SHOWN FROM RECORD PREVIOUS CONSTRUCTION, AND ARE FOR USE ONLY. REFER TO ORIGINAL SURVEY OTHER USES. PROPERTY LINES AT NORTH SITE ARE NOT SHOWN.

Brown and Caldwell Consultants

REVISIONS

INJECTION WELL LOCATION PLAN

LAHAINA
WASTEWATER RECLAMATION FACILITY

Located at 3300 Honoapiilani Hwy., Honokowai, Lahaina, Maui

UIC Permit No. UM-1357

Injection Well Location & Number ■ "1"

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

'04 JUN -2 P2:43

COUNTY OF MAUI
PUBLIC WORKS

RECEIVED
2004 JUN 10 AM 7:57
WASTEWATER
RECLAMATION DIVISION
COUNTY OF MAUI

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O.BOX 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
EMD/SDWB

1094

☐ RUSH

DEPT. OF PUBLIC WORKS	INFO	ACTION	SEE ME	COMMENTS	COPY	FILE
DIRECTOR						
DEP. DIR						
PERS.						
STAFF CE						
LUCA						
WW RECL.	✓					
SOLID W.						
ENGR.						
HWYS.						
SECTY.						

Return to _____ Due _____

Ref. No. _____

By _____ Date: _____

May 26, 2004

Mr. Gilbert S. Coloma-Agaran, Director
Department of Public Works
and Environmental Management
County of Maui
200 South High Street
Wailuku, Hawai`i 96793

ATTENTION: Mr. Scott R. Rollins

Dear Mr. Coloma-Agaran:

SUBJECT: APPROVAL OF YOUR MAY 7, 2004 REQUEST TO ~~CHANGE THE~~ SCHEDULING OF TYPES III & IV SAMPLING EVENTS AT LAHAINA WWRF
UNDERGROUND INJECTION CONTROL (UIC)
UIC PERMIT NO. UM-1357

Enclosed is the revised Monitoring & Reporting Schedule of UIC Permit No. UM-1357 which changes the scheduling of the facility's Types III and IV wastewater sampling events. Replace the original schedule with the revised schedule. The effective date of this modification is May 31, 2004.

If you have any questions on this matter, please contact Norris Uehara of the Safe Drinking Water Branch (SDWB) at 586-4258 (Honolulu) or call from Maui the direct toll free number 984-2400, ext. 64258.

☐ RUSH

WWRD	INFO	ACTION	DRAFT RESP	SEE ME	COMMENTS	FILE	COPY
CHIEF							
PLANNING	✓	✓				✓	
DESIGN							
ACCOUNTANT							
SECRETARY							
OPERATIONS	✓						✓
ANITA	✓	✓					✓
_____							
_____							

By _____ Date _____
Returning

Sincerely,

FOR THOMAS E. ARIZUMI, P.E., CHIEF
Environmental Management Division

NU:nbp

Enclosure: Revised Monitoring & Reporting Schedule for UM-1357

c: Gordon Muraoka, SDWB Sanitarian, Maui (w/o encl.)

MONITORING AND REPORTING SCHEDULE

UIC PERMIT NO. :

UM-1357

PERMIT ISSUED:

03/29/2004

PERMIT REVISED:

05/31/2004

PERMIT EXPIRES:

03/28/2009

[\] **SCHEDULED**

[X] **COMPLETED**

MONTH	TYPE I	TYPE II	TYPE III/IV	REPORT OF ANALYTICAL RESULTS ★	STATUS REPORT	MONTH	TYPE I	TYPE II	TYPE III/IV	REPORT OF ANALYTICAL RESULTS ★	STATUS REPORT
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08/06	\										
09/06	\										
10/06	\										
11/06	\										
12/06	\	\		\							
01/07	\				\						
02/07	\										
03/07	\										

★ Submit the original laboratory results and the original chain-of-custodies. When applicable, also submit the prior months' unsubmitted results, thus representing a group-of-months submittal.

ALAN M. ARAKAWA
Mayor
GILBERT S. COLOMA-AGARAN
Director
MILTON M. ARAKAWA, A.I.C.P.
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
AND ENVIRONMENTAL MANAGEMENT
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793

RALPH NAGAMINE, L.S., P.E.
Development Services Administration
TRACY TAKAMINE, P.E.
Wastewater Reclamation Division
Engineering Division
Solid Waste Division
BRIAN HASHIRO, P.E.
Highways Division

COPY

July 16, 2004

Certified Mail
7003 2260 0006 9843 7263
Return Receipt Requested

Mr. Thomas E. Arizumi, P.E., Chief
Environmental Management Division
State Department of Health
P.O. Box 3378
Honolulu, HI 96801

Attn: Mr. Norris Uehara

Dear Mr. Arizumi,

SUBJECT: LAHAINA UIC PERMIT, UM-1357
TYPE I-IV TESTING RESULTS

Enclosed is the subject matter reporting requirements for County of Maui, Wailuku/Kahului Wastewater Reclamation Facility.

Laboratory sample dates are 6/08/2004 and 6/09/20043.

Should you have any questions, please contact Mr. Scott Rollins at 270-7417.

(808) 270-7425

Sincerely,

G. S. Coloma-Agaran

Gilbert S. Coloma-Agaran
Director of Public Works &
Environmental Management

Enclosure:

cc: Jerry Morgan
Lahaina WWRF

SR:sr(Lahaina UIC Type I IV test)

Exhibit P-2

UIC ANALYTICAL REPORTING SUMMARY SHEETS

Facility: Lahaina Wastewater Reclamation Facility

UIC Permit No.: UM-1357

Type of Analysis: UIC Type I & II

Sample Date: 6/8/04 - 6/9/04

Parameters	Type	Result	Regulatory Level
Biochemical Oxygen Demand	I	3 mg/L	30 mg/L (composite)
Field pH	I	6.1 S.U.	
Total Residual Chlorine	I	0.2 mg/L	0.1 mg/L
Total Suspended Solids	I	3 mg/L	30 mg/L (composite)
Turbidity	I	1.7 NTU	
Ammonia (as N)	II		
Dissolved Oxygen	II	6.6 mg/L	
Fecal Coliform	II	110 MPN/100mL	
Field Temperature	II	28.4 ^{0} C	
Kjeldahl Nitrogen	II		
Nitrate - Nitrite	II		
Oil and Grease	II		
Orthophosphate	II		
Total Dissolved Solids	II		
Total Phosphorus	II		

Food Quality Lab
3375 Koapaka St. Suite G-314
Honolulu, Hawaii 96819
1-808-535-6066
Fax 1-808-535-6069

Method Blank Report

Sample ID: County of Maui 150 **Matrix:** Liquid
Preparation Date: 06-09-04

Parameter	Result	Reporting Limit	Method	Analysis Date
Ammonia -NH_3-N	ND	0.1 mg/L	EPA 350.2	6/14/2004
Nitrate-Nitrite-N	ND	0.01 mg/L	EPA 353.3	6/23/2004
Total Kjeldahl Nitrogen	ND	0.1 mg/L	EPA 351.3	6/14/2004
Total Dissolved Solids	ND	1.0 mg/L	SM 20, 2540C	6/18/2004
Ortho Phosphate	ND	0.1 mg/L	EPA 365.2	6/10/2004
Total Phosphorus	ND	0.1 mg/L	EPA 365.2	6/14/2004
Oil and Grease	ND	1.0 mg/L	EPA 413.2	6/18/2004
Chloride	ND	1.0 mg/L	SM 20, 4500-Cl-C	6/16/2004
Fluoride	ND	0.1 mg/L	EPA 300	6/18/2004
Total Alkalinity	ND	1.0 mg/L	EPA 310.1	6/9/2004
Silica	ND	1.0 mg/L	EPA 370.1	6/21/2004
Sulfate	ND	10 mg/L	EPA 375.3	6/14/2004

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1-808-535-6066
Fax 1-808-535-6069

Laboratory Control Sample

Sample ID: County of Maui 150 **Matrix:** Liquid **Matrix:** Liquid
Preparation Date: 06-09-04

Parameter	Amount Spiked	Measured Amount	Units	Percent Recovery	Reporting Limit	Method	Analysis Date
Ammonia -NH_3-N	9.36	8.74	mg/L	93%	80-120%	EPA 350.2	6/14/2004
Nitrate-Nitrite-N	1	0.97	mg/L	97%	80-120%	EPA 353.3	6/23/2004
Total Kjeldahl Nitrogen	8	7.64	mg/L	96%	80-120%	EPA 351.3	6/14/2004
Total Dissolved Solids	100	95	mg/L	95%	80-120%	SM 20, 2540C	6/18/2004
Ortho Phosphate	2	1.95	mg/L	98%	80-120%	EPA 365.2	6/10/2004
Total Phosphorus	2	1.91	mg/L	96%	80-120%	EPA 365.2	6/14/2004
Oil and Grease	20	19.1	mg/L	96%	80-120%	EPA 413.2	6/18/2004
Chloride	200	190	mg/L	95%	80-120%	SM 20, 4500-Cl-C	6/16/2004
Fluoride	1	0.93	mg/L	93%	80-120%	EPA 300	6/18/2004
Total Alkalinity	100	97.5	mg/L as $CaCO_3$	98%	80-120%	EPA 310.1	6/9/2004
Silica	10.0	10.4	mg/L	104%	80-120%	EPA 370.1	6/21/2004
Sulfate	100	92	mg/L	92%	80-120%	EPA 375.3	6/14/2004

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1-808-535-6066
Fax 1-808-535-6069

Laboratory Control Sample

Sample ID: County of Maui 150 **Matrix:** Liquid
Preparation Date: 06-09-04

Parameter	Percent Recovery	Reporting Limit	Method	Analysis Date
Ammonia -NH_3-N	93%	0.1 mg/L	EPA 350.2	6/14/2004
Nitrate-Nitrite-N	97%	0.01 mg/L	EPA 353.3	6/23/2004
Total Kjeldahl Nitrogen	96%	0.1 mg/L	EPA 351.3	6/14/2004
Total Dissolved Solids	95%	1.0 mg/L	SM 20, 2540C	6/18/2004
Ortho Phosphate	98%	0.1 mg/L	EPA 365.2	6/10/2004
Total Phosphorus	96%	0.1 mg/L	EPA 365.2	6/14/2004
Oil and Grease	96%	1.0 mg/L	EPA 413.2	6/18/2004
Chloride	95%	1.0 mg/L	SM 20, 4500-Cl-C	6/16/2004
Fluoride	93%	0.1 mg/L	EPA 300	6/18/2004
Total Alkalinity	98%	1.0 mg/L	EPA 310.1	6/9/2004
Silica	104%	1.0 mg/L	EPA 370.1	6/21/2004
Sulfate	92%	10 mg/L	EPA 375.3	6/14/2004

Food Quality Lab

3375 Koapaka St. Suite G-314
Honolulu, Hawaii 96819
1-808-535-6066
Fax 1-808-535-6069

Client: County of Maui/Wastewater Division
480 Welakahao Road
Kihei, HI 96753
Attn: Anita Fernandez

Project Name: UIC Lahaina

DATE: June 28, 2004

Date Received: 06-09-04
Date Tested: 06-09-04
Date Completed: 06-23-04

The following pages present the analytical data as received directly from Positive Lab Service.

Analysis performed by a certified sub-contracted laboratory.

Approved By: Helani Olsen
Date: 06-28-04

POSITIVE LAB SERVICE

781 East Washington Blvd., Los Angeles, CA 90021
(213) 745-5312 FAX (213) 745-6372

CERTIFICATE OF ANALYSIS

Food Quality Lab **06/18/04**
File# 73580
3375 Koapaka Street, Suite G314
Honolulu, HI 96819

Attn: Tai Khan
Phone: (808) 839-9444 Fax: (808) 839-9744

Sample#: 20041535-001 **Collector:** Client **Method:** Via: Fed-Ex
Received: 06/11/2004 **Sampling Date/Time:** 06/09/2004
Type: Water
I.D.: Lahaina WWRF

Parameter	Prep/Test Method	Result	Unit	PQL
	Prep Date: 06/15/2004	**Analysis Date: 06/15/2004**		
Flash Point	ASTM 93	ND TO 212	degrees F	
	Prep Date: 06/11/2004	**Analysis Date: 06/11/2004**		
pH	EPA 150.1	7.3	Units	0.1
	Prep Date: 06/11/2004	**Analysis Date: 06/11/2004**		
Cyanide, Reactive	SM-4500-CN-I	ND	mg/l	0.2
	Prep Date: 06/11/2004	**Analysis Date: 06/11/2004**		
ulfide, Reactive	EPA 376.2	ND	mg/l	0.04
	Prep Date: 06/16/2004	**Analysis Date: 06/16/2004**		
Phenols, Total	EPA 420.1	ND	mg/l	0.05
	Prep Date: 06/14/2004	**Analysis Date: 06/15/2004**		
Arsenic, TCLP	EPA 1311	EPA 6010B	ND	mg/l 0.01
Barium, TCLP	EPA 1311	EPA 6010B	ND	mg/l 0.01
Cadmium, TCLP	EPA 1311	EPA 6010B	ND	mg/l 0.01
Calcium, TCLP	EPA 1311	EPA 6010B	30	mg/l 1
Chromium, TCLP	EPA 1311	EPA 6010B	ND	mg/l 0.01
Copper, TCLP	EPA 1311	EPA 6010B	ND	mg/l 0.01
Lead, TCLP	EPA 1311	EPA 6010B	0.0050	mg/l 0.005
Magnesium, TCLP	EPA 1311	EPA 6010B	27	mg/l 1
Potassium, TCLP	EPA 1311	EPA 6010B	26	mg/l 1
Selenium, TCLP	EPA 1311	EPA 6010B	ND	mg/l 0.01
Silver, TCLP	EPA 1311	EPA 6010B	ND	mg/l 0.01
Sodium, TCLP	EPA 1311	EPA 6010B	170	mg/l 1
Vanadium, TCLP	EPA 1311	EPA 6010B	ND	mg/l 0.01
Zinc, TCLP	EPA 1311	EPA 6010B	0.47	mg/l 0.05
	Prep Date: 06/14/2004	**Analysis Date: 06/15/2004**		
Mercury,TCLP	EPA 1311	EPA 245.1	ND	mg/l 0.001
	Prep Date: 06/14/2004	**Analysis Date: 06/14/2004**		
Benzene, TCLP	EPA 1311	EPA 8260B	ND	ug/l 1
Bromodichloromethane, TCLP	EPA 1311	EPA 8260B	1.2	ug/l 1
Bromoform, TCLP	EPA 1311	EPA 8260B	1.6	ug/l 1
Bromomethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l 1
Carbon Tetrachloride, TCLP	EPA 1311	EPA 8260B	ND	ug/l 1
Chlorobenzene, TCLP	EPA 1311	EPA 8260B	ND	ug/l 1
Chloroethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l 1
2-Chloroethylvinyl ether, TCLP	EPA 1311	EPA 8260B	ND	ug/l 1
Chloroform, TCLP	EPA 1311	EPA 8260B	ND	ug/l 1
Chloromethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l 1

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3375 Koapaka Street, Suite G314
Honolulu, HI 96819

Attn: Tai Khan
Phone: (808) 839-9444 Fax: (808) 839-9744

Dibromochloromethane, TCLP	EPA 1311	EPA 8260B	2.2	ug/l	1
1,2-Dichlorobenzene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,3-Dichlorobenzene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,4-Dichlorobenzene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,1-Dichloroethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,2-Dibromoethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,1-Dichloroethylene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
trans-1,2-dichloroethene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,2-Dichloropropane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
cis-1,3-Dichloropropene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
trans-1,3-Dichloropropene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Ethyl benzene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Methylene chloride, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Methyl Ethyl Ketone, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
MTBE, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,1,2,2-Tetrachloroethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Tetrachloroethene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Toluene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,1,1-Trichloroethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,1,2-Trichloroethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Trichloroethene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Trichlorofluoromethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Vinyl chloride, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Xylene (Total), TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Surrogates	EPA 1311	EPA 8260B	*	*	
Dibromofluoromethane, TCLP	EPA 1311	EPA 8260B	99	Percent	
Toluene D-8, TCLP	EPA 1311	EPA 8260B	107	Percent	
4-Bromofluorobenzene, TCLP	EPA 1311	EPA 8260B	105	Percent	
Prep Date:	**06/16/2004**	**Analysis Date:**	**06/17/2004**		
o-Cresol, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
m-Cresol, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
p-Cresol, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
Hexachlorobenzene, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
2,4-Dinitrotoluene	EPA 1311	EPA 8270C	ND	ug/l	5
Hexachloro-1, 3-butadiene, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
Hexachloroethane, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
Nitrobenzene, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
Pentachlorophenol, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
Pyridine, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
2,4,5-Trichlorophenol, TCLP	EPA 1311	EPA 8270C	ND	ug/l	
2,4,6-Trichlorophenol, TCLP	EPA 1311	EPA 8270C	ND	ug/l	
Surrogates	EPA 1311	EPA 8270C	*	*	
2-Fluorophenol, TCLP	EPA 1311	EPA 8270C	26	Percent	
Phenol D-5, TCLP	EPA 1311	EPA 8270C	18	Percent	

POSITIVE LAB SERVICE

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CERTIFICATE OF ANALYSIS

Food Quality Lab **06/18/04**
File# 73580
3375 Koapaka Street, Suite G314
Honolulu, HI 96819

Attn: Tai Khan
Phone: (808) 839-9444 Fax: (808) 839-9744

Nitrobenzene-D-5, TCLP	EPA 1311	EPA 8270C	57	Percent	
2-Fluorobiphenyl, TCLP	EPA 1311	EPA 8270C	54	Percent	
2,4,6-Tribromophenol, TCLP	EPA 1311	EPA 8270C	68	Percent	
Terphenyl D-14, TCLP	EPA 1311	EPA 8270C	35	Percent	
Prep Date:	**06/15/2004**	**Analysis Date:**	**06/15/2004**		
Chlordane, TCLP	EPA 1311	EPA 8081A	ND	ug/l	0.1
Heptachlor, TCLP	EPA 1311	EPA 8081A	ND	ug/l	0.05
Endrin, TCLP	EPA 1311	EPA 8081A	ND	ug/l	0.1
Lindane, TCLP	EPA 1311	EPA 8081A	ND	ug/l	0.05
Methoxychlor, TCLP	EPA 1311	EPA 8081A	ND	ug/l	0.5
Toxaphene, TCLP	EPA 1311	EPA 8081A	ND	ug/l	0.5
Surrogates	EPA 1311	EPA 8081A	*		
4,5,6-Tetrachloro-m-Xylene, TCLP	EPA 1311	EPA 8081A	82	Percent	
cachlorobiphenyl, TCLP	EPA 1311	EPA 8081A	36	Percent	
Prep Date:		**Analysis Date:**			
2,4-D, TCLP	EPA 1311	EPA 8151	See	Attachment	0.2
2,4,5-TP (Silvex), TCLP	EPA 1311	EPA 8151	See	Attachment	0.075

Sample#: 20041535-002 **Collector:** **Method:**
Received: 06/11/2004 **Sampling Date/Time:**
Type: Water
I.D.: Method Blank

Parameter	Prep/Test Method	Result	Unit	PQL
Prep Date:	**06/11/2004**	**Analysis Date:**	**06/11/2004**	
Cyanide, Reactive	SM-4500-CN-I	ND	mg/l	0.2
Prep Date:	**06/11/2004**	**Analysis Date:**	**06/11/2004**	
Sulfide, Reactive	EPA 376.2	ND	mg/l	0.04
Prep Date:	**06/16/2004**	**Analysis Date:**	**06/16/2004**	
Phenols, Total	EPA 420.1	ND	mg/l	0.05
Prep Date:	**06/14/2004**	**Analysis Date:**	**06/15/2004**	
Arsenic, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	0.01
Barium, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	0.01
Cadmium, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	0.01
Calcium, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	1
Chromium, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	0.01
Copper, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	0.01
Lead, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	0.005
Magnesium, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	1
otassium, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	1
Selenium, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	0.01
Silver, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	0.01
Sodium, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	1
Vanadium, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	0.01
Zinc, TCLP	EPA 1311 / EPA 6010B	ND	mg/l	0.05

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	Prep Date: 06/14/2004	**Analysis Date: 06/15/2004**			
Mercury,TCLP	EPA 1311	EPA 245.1	ND	mg/l	0.001
	Prep Date: 06/14/2004	**Analysis Date: 06/14/2004**			
Benzene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Bromodichloromethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Bromoform, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Bromomethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Carbon Tetrachloride, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Chlorobenzene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Chloroethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
2-Chloroethylvinyl ether, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Chloroform, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Chloromethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Dibromochloromethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,2-Dichlorobenzene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,3-Dichlorobenzene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,4-Dichlorobenzene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,1-Dichloroethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,2-Dibromoethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,1-Dichloroethylene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
trans-1,2-dichloroethene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,2-Dichloropropane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
cis-1,3-Dichloropropene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
trans-1,3-Dichloropropene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Ethyl benzene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Methylene chloride, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Methyl Ethyl Ketone, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
MTBE, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,1,2,2-Tetrachloroethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Tetrachloroethene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Toluene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,1,1-Trichloroethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
1,1,2-Trichloroethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Trichloroethene, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Trichlorofluoromethane, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Vinyl chloride, TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Xylene (Total), TCLP	EPA 1311	EPA 8260B	ND	ug/l	1
Surrogates	EPA 1311	EPA 8260B	*	*	
Dibromofluoromethane, TCLP	EPA 1311	EPA 8260B	99	Percent	
Toluene D-8, TCLP	EPA 1311	EPA 8260B	104	Percent	
4-Bromofluorobenzene, TCLP	EPA 1311	EPA 8260B	103	Percent	
	Prep Date: 06/16/2004	**Analysis Date: 06/17/2004**			
o-Cresol, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
m-Cresol, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5

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Attn: Tai Khan
Phone: (808) 839-9444 Fax: (808) 839-9744

p-Cresol, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
Hexachlorobenzene, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
2,4-Dinitrotoluene	EPA 1311	EPA 8270C	ND	ug/l	5
Hexachloro-1, 3-butadiene,TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
Hexachloroethane, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
Nitrobenzene, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
Pentachlorophenol, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
Pyridine, TCLP	EPA 1311	EPA 8270C	ND	ug/l	5
2,4,5-Trichlorophenol, TCLP	EPA 1311	EPA 8270C	ND	ug/l	
2,4,6-Trichlorophenol, TCLP	EPA 1311	EPA 8270C	ND	ug/l	
Surrogates	EPA 1311	EPA 8270C	*	*	
2-Fluorophenol, TCLP	EPA 1311	EPA 8270C	24	Percent	
Phenol D-5, TCLP	EPA 1311	EPA 8270C	18	Percent	
Nitrobenzene-D-5, TCLP	EPA 1311	EPA 8270C	51	Percent	
2-Fluorobiphenyl, TCLP	EPA 1311	EPA 8270C	44	Percent	
2,4,6-Tribromophenol, TCLP	EPA 1311	EPA 8270C	45	Percent	
Terphenyl D-14, TCLP	EPA 1311	EPA 8270C	40	Percent	
Prep Date:	**06/15/2004**	**Analysis Date:**	**06/15/2004**		
Chlordane, TCLP	EPA 1311	EPA 8081A	ND	ug/l	0.1
Heptachlor, TCLP	EPA 1311	EPA 8081A	ND	ug/l	0.05
Endrin, TCLP	EPA 1311	EPA 8081A	ND	ug/l	0.1
Lindane, TCLP	EPA 1311	EPA 8081A	ND	ug/l	0.05
Methoxychlor, TCLP	EPA 1311	EPA 8081A	ND	ug/l	0.5
Toxaphene, TCLP	EPA 1311	EPA 8081A	ND	ug/l	0.5
Surrogates	EPA 1311	EPA 8081A	*		
2,4,5,6-Tetrachloro-m-Xylene, TCLP	EPA 1311	EPA 8081A	68	Percent	
Decachlorobiphenyl, TCLP	EPA 1311	EPA 8081A	56	Percent	
Prep Date:		**Analysis Date:**			
2,4-D, TCLP	EPA 1311	EPA 8151	See	Attachment	0.2
2,4,5-TP (Silvex), TCLP	EPA 1311	EPA 8151	See	Attachment	0.075

Authorized Signature(s)

ND = Not Detected
NA = Not Applicable
PQL = Practical Quantitation Limit
Environmental Laboratory Accreditation Program Certificate No. 1131, LACSD No. 10138
Any remaining sample(s) for testing will be disposed of 30 days from receipt date unless notified.

Weck Laboratories, Inc.
Environmental and Analytical Services - Since 1964

Report Date: Friday, June 18, 2004
Received Date: Monday, June 14, 2004
Received Time: 3:15 pm

Turnaround Time: 5 days

Client: Positive Lab Service
781 East Washington Blvd.
Los Angeles, CA 90021

Phone: (213) 745-5312
FAX: (213) 745-6372

Attn: John Schmidt

Project: 20041535

P.O.#: 6302

Certificate of Analysis

Work Order No: 4061421-01 **Sample ID:** 20041535-001 **Matrix:** TCLP
Sampled by: Client **Sampled:** 06/09/04 00:00 **Sample Note:**

Analyte	Result	Qualifier	Units	Reporting Limit	Dilution	Method	Prepared	Analyzed	Batch
Soluble 2,4-D on TCLP Extract.....	ND		ug/l	2.0	1	EPA 8151A	06/15/04	06/17/04	hn W406439
Soluble 2,4,5-TP on TCLP Extract....	ND		ug/l	0.50	1	EPA 8151A	06/15/04	06/17/04	hn W406439
Surrogate: 2,4-DCAA			*87.5 %*	*60-157*			*06/15/04*	06/17/04	hn *W406439*

b#: 4061421

14859 East Clark Avenue, City of Industry, California 91745-1396 (626) 336-2139 FAX (626) 336-2634
www.wecklabs.com

Quality Control Report

Weck Laboratories, Inc

Chlorinated Herbicides by EPA Method 8151A - Quality Control

Analyte	Sample Result	QC Result	Qualifier	Units	Spike Level	%REC	%REC Limits	RPD	RPD Limit
Batch W406439 - EPA 3510C									
Blank (W406439-BLK1)					Prepared: 06/15/04 Analyzed: 06/17/04				
Soluble 2,4-D on TCLP Extract.....		ND		ug/l					
Soluble 2,4,5-TP on TCLP Extract.....		ND		ug/l					
Surrogate: 2,4-DCAA		*18.8*		ug/l	*20.0*	*94.0*	*60-157*		
LCS (W406439-BS1)					Prepared: 06/15/04 Analyzed: 06/17/04				
Soluble 2,4-D on TCLP Extract.....		4.61		ug/l	5.00	92.2	49-169		
Soluble 2,4,5-TP on TCLP Extract.....		2.49		ug/l	2.50	99.6	37-183		
Surrogate: 2,4-DCAA		*15.5*		ug/l	*20.0*	*77.5*	*60-157*		
LCS Dup (W406439-BSD1)					Prepared: 06/15/04 Analyzed: 06/17/04				
Soluble 2,4-D on TCLP Extract.....	3.43		QR-02	ug/l	5.00	68.6	49-169	29.4	25
Soluble 2,4,5-TP on TCLP Extract.....	1.93		QR-02	ug/l	2.50	77.2	37-183	25.3	25
Surrogate: 2,4-DCAA		*14.0*		ug/l	*20.0*	*70.0*	*60-157*		

Authorized Signature

Contact Jayna Kostura (Project Manager)

ELAP # 1132
LACSD # 10143

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Notes:
The Chain of Custody document is part of the analytical report.
Any remaining sample(s) for testing will be disposed of one month from the final report date unless other arrangements are made in advance.
All results are expressed on wet weight basis unless otherwise specified.
ND=Not detected, below the reporting limit.
Sub=Subcontracted analysis, original report enclosed.
If sample collected by Weck Laboratories, sampled in accordance to SOPMIS002

Flags for Data Qualifiers:
QR-02 = The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

City of Industry, California 91745-1396 (626) 336-2139 FAX (626) 336-2634

Food Quality Lab

3375 Koapaka St., Suite G314
Honolulu, Hawaii 96819
Tel: (808) 535-6066/Fax: (808) 535-6069

CHAIN OF CUSTODY & ANALYSIS REQUEST

Report to:	Anita Fernandez	Contact Person:	Anita Fernandez
Address:	COM Central Lab	Phone #:	879 6109 213
	480 Welakahao Rd	Fax #:	879 6369
	Kihei HI 96753	Cell #:	

Project Name:	UIC Lahaina
Job No./P.O.#:	128383
Sampled By:	Robert Rgebuck
Temp. Control:	

Lab #	Sample Location/Description	Date	Time	Grab	Comp.	On-site pH	On-site Cl2	On-site Temp.	Analysis Requested
1	Lahaina Wharf	6/9/04	0800		X				NH_3, NO_3-NO_2, TN
2	"	"			X				Cu, Hg, K, Na, V, Zn
3	"	"			X				TDS, OCTHG P
4	"	"			X				Specific grav, Cl-, Fl, S TALK, SULFATE
5	"	"			X				Phenol
6	"			X					Ignitability, Corrosivity
7	"			X					O+G

RELINQUISHED BY SIGNATURE		DATE	6/9/04
PRINTED NAME	Robert Rgebuck	TIME	1045
RELINQUISHED BY SIGNATURE		DATE	
PRINTED NAME		TIME	

RECEIVED BY SIGNATURE	Helani Olsen	DATE	6/9/04
PRINTED NAME	Helani Olsen	TIME	1500
RECEIVED BY SIGNATURE		DATE	
PRINTED NAME		TIME	

Remarks (special handling, field conditions, etc.):

Food Quality Lab
3375 Koapaka St., Suite G314
Honolulu, Hawaii 96819
Tel: (808) 535-6066/Fax: (808) 535-6069

CHAIN OF CUSTODY & ANALYSIS REQUEST

Report to:	ANITA FERNANDEZ	**Contact Person:**	Anita Fernand
Address:	COM CENTRAL LAB	**Phone #:**	8796109 213
	KIHEI HI 96753	**Fax #:**	879 6369
	480 WELAKAHAO RD	**Cell #:**	

Project Name:	UIC - LAHAINA
Job No./P.O.#:	128383
Sampled By:	Robert Rychlinski
Temp. Control:	

150

Lab #	Sample Location/Description	Date	Time	Grab	Comp.	On-site pH	On-site Cl2	On-site Temp.	Analysis Requested
8	Lahaina WWRF	6/9/04	0900	X					TYPE III INORG/ORG
9	"	"	"	X					"
10	"	"	"	X					"
11	"	"	"	X					"
12	"	"	"	X					REACTIVITY
13	"	"	"	X					TYPE IV VOLATILE ORGANICS
14	"	"	"	X					"
15	"	"	"	X					"

RELINQUISHED BY SIGNATURE [signature]	DATE 6/9/04	**RECEIVED BY** SIGNATURE Helani Olsen	DATE 6/9/04
PRINTED NAME Robert Rychlinski	TIME 1045	PRINTED NAME Helani Olsen	TIME 1600
RELINQUISHED BY SIGNATURE	DATE	**RECEIVED BY** SIGNATURE	DATE
PRINTED NAME	TIME	PRINTED NAME	TIME

[redacted] **Remarks** (specia [redacted] ng, field conditions, etc.): [redacted]

Witnessed by DOH: C. [illegible]

County of Maui

Wastewater Reclamation Division

LAHAINA WASTEWATER RECLAMATION FACILITY

Underground Injection Control (UIC) Injection Well Status Report Number 18

July 2004

UIC Permit No. UH-1357
Facility I.D. No. 6 - 5641.01

Submitted to:

State of Hawai'i
Department of Health
Safe Drinking Water Branch

Exhibit P-3

COUNTY OF MAUI

WASTEWATER RECLAMATION DIVISION

LAHAINA WASTEWATER RECLAMATION FACILITY

Underground Injection Control (UIC) Injection Well Status Report Number 18

July 2004

UIC Permit No. UH-1357
Facility I.D. Number 6 - 5641.01

Submitted to:

State of Hawai'i
Department of Health
Safe Drinking Water Branch

This work was prepared by me or under my supervision.

Scott R. Rollins, P. E. Lic. Number 8067
County of Maui

UIC INJECTION WELL STATUS Report No. 18
County of Maui
Wastewater Reclamation Division

LAHAINA WASTEWATER RECLAMATION FACILITY
July 2004

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BACKGROUND

The County of Maui Wastewater Reclamation Division (County) operates a Class V, Subclass AB, injection well system consisting of four injection wells (Wells 1 - 4) at the Lahaina Wastewater Reclamation Facility (LWWRF). Operation is in accordance with **Underground Injection Control (UIC) Permit No. UM-1357**, first issued October 2, 1992 and renewed most recently on March 29, 2000 by the State of Hawaii Department of Health (DOH). This UIC status report covers the period January, 2003 through July 2004 and summarizes the County of Maui's July 2004 site investigations and assessment of well performance.

Following is a summary of LWWRF injection well background information. For a more detailed description, please refer to LWWRF UIC Status Report Nos. 1 – 3.

Plant Location

Address:	3300 Honoapiilani Hwy., Honokowai, Lahaina, Maui
Tax Map Key Number:	4-4-02:29
Geographical Coordinates:	Latitude 20° 56' 55" North; Longitude 156° 41' 25" West

Hydrologic, Geologic, and Environmental Setting

Site Elevation:	Between 26 and 32 feet mean sea level (msl)
Geology:	[0 to 30 ft below ground surface (bgs)] - Ewa silty clay loam [30 to 75 ft bgs] - limestone [> 75 ft bgs] - fractured layers of Wailuku lava basalt
Soil Permeability:	Moderate
Groundwater Recharge:	Low due to low rainfall
Static Water Elevation:	Approximately 1 foot msl
Tidal Effects:	Negligible

Climate

Average Annual Rainfall:	Approximately 20 inches
Temperature Range:	50 - 95 degrees Fahrenheit

Well Operation and UIC Permit Requirements

Primary Discharge:	Secondary treated domestic sewage effluent with advanced effluent filtration and disinfection to R-1 standards
Max. Ave. Wkly Discharge:	9.0 million gallons per day (mgd)
Max. Daily Discharge:	19.8 mgd
Injectate Requirements:	Arithmetical Average (BOD/TSS): Biochemical oxygen demand (BOD): < 30 mg/L Total suspended solids (TSS): < 30 mg/L Residual chlorine: > 0.1 mg/L

Well Construction

Injection Well No.	**1**	**2**	**3**	**4**
Construction date	1979	1979	1985	1985
Total depth of well (ft)	200	180	225	255
Bottom of well elev.(ft)	-168	-150	-200	-229
Flow meter	McCrometer in-line propeller type			
Solid casing (w/3 ft. stick up)				
Length (ft)	88	88	108	108
Diameter (inches)	20	20	20	20
Material	steel	steel	steel	steel
Perforated casing				
Length (ft)	115	-	-	150
Diameter (inches)	14	-	-	14
Material	steel	-	-	steel
Open hole				
Length (ft)		95	120	-

Well Modifications

Date of Modification	Description
1994	**Wells 1 - 4:** Consolidation of effluent disposal scheme; incorporation to SCADA system; addition of surge air supply piping, overflow line, chemical access port, flow meter, and valve/flow meter vault
1999	**Well 1:** Installation of 115 feet of perforated casing in the open bore section of the well

LAHAINA WWRF INJECTION WELL SYSTEM STATUS

July 2004

In accordance with the October 1999 UIC Injection Well Status Report Guidelines, the County of Maui WRD personnel conducted an onsite inspection and performance assessment of LWWRF Injection Wells 1 through 4 on January 22 and 30, 2004. Activities associated with the wells that have transpired since the last UIC status report and summaries of the results and recommendations from this most recent UIC inspection are bulletized below. The comprehensive UIC status report follows this summary section.

Activities/Actions Since Previous UIC Status Report

- Monthly well inspections and standard well head maintenance
- Cleaning of all Wells in July 2004
- Weekly effluent quality analyses
- Completed replacement of control valve stem at Well No. 2 in January 2004
- Replaced bolts on flange in meter box for Well No. 2
- Bailed debris from the bottom of Well No. 2

Results and Recommendations for UIC Status Report No. 18

- Continue current operating and maintenance procedures with an extra emphasis on corrosion control
- Monitor the performance of Wells No. 3 and 4 for any significant capacity reduction
- Continue quarterly well cleaning and closely monitor performance
- Consider Scheduling Well No. 3 for air-burst cleaning

Overall Well Operation

The current average dry-weather flow to LWWRF is approximately 5.0 million gallons per day (mgd). The plant provides secondary treatment using the activated sludge biological process without primary sedimentation. Preliminary treatment includes mechanical bar screens and grit removal at the headworks. Advanced treatment to the State Department of Health R-1 effluent

quality was achieved in 1995 by the addition of filtration, UV disinfection, nutrient removal, and improved sludge handling capabilities.

The concentration of the monthly average effluent discharge is typically less than 5 mg/l for both biochemical oxygen demand (BOD) and total suspended solids (TSS). These concentrations are well below the maximum allowed in the UIC permit.

All four injection wells are fed by gravity from the effluent distribution structure located just north of the effluent filters. Three of the eight filter cells are designed to route filtered effluent (FE) to the UV system for reuse purposes, but can also be directed to the effluent distribution structure.

Effluent from the remaining five cells flows directly to the effluent distribution structure. All effluent routed to the wells is chlorinated at the effluent distribution structure to meet a 0.1 mg/L residual. The effluent distribution structure provides hydraulic control of the majority of the flow to the injection well system. An adjustable weir gate in this structure ranges from minimum elevation 29 feet msl to a maximum of 34.5 feet msl. Downstream of the weir, effluent is transported to all the wells via a 36-inch diameter ductile iron FE pipe network. Smaller diameter piping which branch from the 36-inch pipe serve the individual wells.

Alternate routes for FE to pass to Wells 1 and 2 include the reclaimed water clearwell, located downstream of the UV structure in the reuse system and the 1985 pump station. Although these disposal methods will rarely be used, they demonstrate the flexibility and operational latitude in the LWWRF effluent distribution system. A schematic of the effluent distribution network is presented in Figure 1.

Flow and head build-up measurement. Flow can be monitored at each wellhead using the McCrometer in-line propeller meters. All wells have digital display units. Flowrates are monitored and recorded by SCADA. Head build-up measurement is currently not measured at the injection wells.

Well cleaning and maintenance. Well cleaning procedures are now performed quarterly, or as needed. The last well cleanings were performed during July 19, 2004. The standard cleaning process involves connecting a 140 psi (pounds per square inch) compressor to the air surge line in each well. For each well, the influent line preceding the well is closed and the overflow line

opened to receive the surged water from the well. Cleaning has helped to reduce plugging of the wells and to maximize the injection capacities of the wells.

In addition to the standard air surging method, Well No.'s 1 and 2 were cleaned in August 2002 using an air-burst technology method. This method tends to clean the wells better than the usual method, but at a much higher cost. Future consideration should be given to cleaning well 3 via this method. Bailing of debris from the bottom of Well No. 2 was completed on June 8, 2004 thus restoring most of the original depth.

Monthly well inspections are completed by plant staff and include documentation of leaks, corrosion, equipment changes or repairs, well level changes, and wellhead maintenance work.

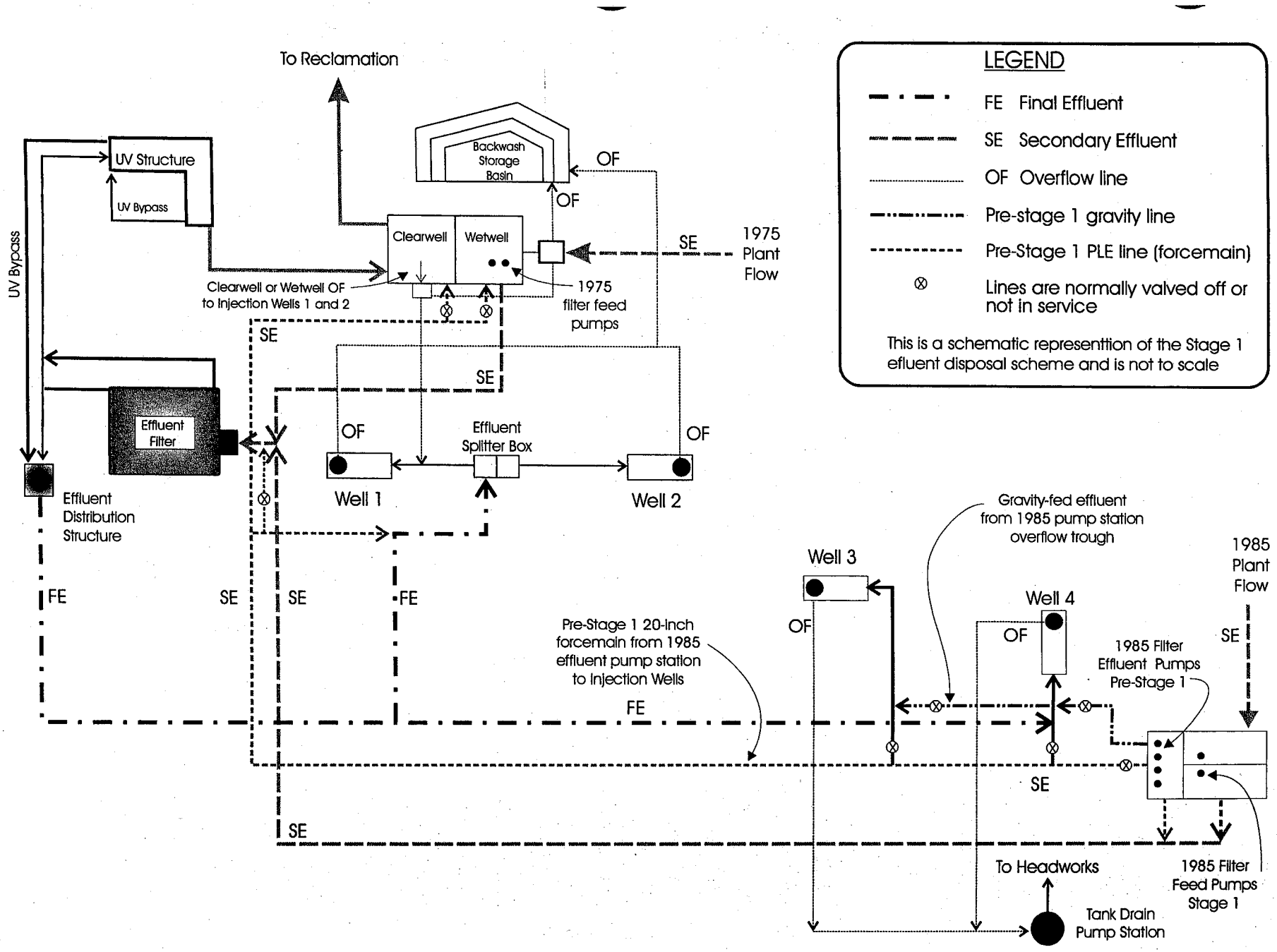


Figure 1. Schematic of LWWRF effluent distribution system

Injection Well Test and Data Analysis Methodology

County of Maui WRD personnel made a site visit to LWWRF on July 9, 2004 and again on July 22, 2004. Each wellhead, related appurtenances, and surrounding area were visually inspected to assess the operational and structural condition of the well system. In addition, current well depths were measured and wellhead photographs were taken.

Access to each well was achieved through the 3-inch diameter chemical feed port in the wellhead casing. The bottom lip of the port is a useful datum because it is both the lowest elevation point of the well that can be opened to the atmosphere and the point of access used for evaluation of the well. Therefore, when extrapolating the test data to estimate maximum well capacity, the elevation of the port at each well was used as the maximum allowable water level that could be attained without leakage from the well. Elevations of the ports were calculated based on ground surface elevations from the UIC permit. An In-Situ Inc. Troll pressure transducer/data logger was installed to monitor water levels in each well for the duration of the test. A transducer was set in each well to provide direct readings of the head of water above the unit. These head values were used to calculate approximate water surface elevations with respect to mean sea level. Injection tests were performed at a minimum of three different injection rates. Each injection rate was achieved by adjusting the butterfly valve at the well being tested and/or closing the butterfly valves at the other wells. Each flow rate was maintained for a minimum of 12 minutes to ensure that a stable water level was attained. The injection rates were progressively increased with the final injection rate corresponding to the maximum well capacity, the total available plant flow or that flowrate that could be reliably maintained for the duration of each step.

The data obtained from the injection tests were analyzed to estimate the injection and well capacities of each well. Injection capacity, which is the ratio of injection rate to head build-up, is a valuable measure of well performance. A significant decrease in injection capacity may suggest clogging of the well. Theoretical well capacity, which is the maximum injection rate that the well can receive without overflowing, is also a good measure of well performance, but is not as reliable. Because the theoretical well capacity is based on the amount of head available in the well, environmental effects on the static water elevation can cause fluctuation in the calculated theoretical well capacity. The injection and theoretical well capacities of each well were compared to previous UIC evaluations to identify potential trends in well performance.

However, results from two previous evaluations, performed by R. M. Towill and GeoLabs, can not be correlated accurately to either Brown and Caldwell results or the County of Maui's because of differing methodology in data analysis. This is discussed in greater detail in Kihei WWRF UIC Status Report No. 5.

Well Depth Measurements

Sounding of the injection well was performed with a weighted 3/8 inch rope test line marked in one foot increments. The depth of each well was measured and compared to the depth specified by the UIC permit. Depth measurements are useful to identify possible obstructions or excessive sediment build-up in the well. Wells 1, 3 and 4 showed little change in depth from the initial construction measurements. Videotape of the wells in December 2001 showed considerable debris in Well No. 2. This leads to the belief that the well depth has not changed but merely the ability of the weighted rope to pass through to the bottom has been hampered. Table 1 below presents the depth measurements of each well in comparison with the depths stated in the UIC permit.

Table 1. Summary of well depth measurements

Well No.	UIC Permit Depth (ft.)	Field-measured Depth (ft.) 1/04	Field-measured Depth (ft.) 7/04
1	200	197	209
2	180	167	173
3	225	224	226
4	255	258	258

LWWRF Well 1 Performance Evaluation

Well 1 was closed for approximately 0 .5 hours prior to testing on July 9, 2004. At 12:29 PM, the static water level was measured by a Solinst depth sounder to be approximately 4.8 feet msl. Starting at about 12:32 PM, Well 1 was tested at three different flowrates. These flowrates and their corresponding water levels are shown in Table 2.

Table 2. Flow rate versus water surface elevation at LWWRF Well 1

Flow rate (gpm)	Flow rate (mgd)	Water surface elevation (ft msl)
300	0.43	6.85
600	0.86	15.67
900	1.30	25.11

The peak water elevation of 25.11 feet msl was about 7.2 feet below the elevation of the chemical injection port. To achieve the flowrate of 900 gpm at Well 1, Well 2 was closed completely while Well 3 and 4 were partially open to accept excess flow that could not be accommodated by Well 1. At 1:20 PM, flow to Well 1 was terminated, and full recovery was achieved within 5 minutes. In Figure 2, a graphic illustration of the approximate water surface elevation during testing and recovery of Well 1 is presented.

Injection wellhead and ground surface conditions. Well 1 is located just east of the operations building in the north half of the plant. The WWRD inspection team saw no indication of leaking from the well or in the flow meter vault. The wellhead and adjacent flow meter vault appeared to be well maintained. Minor corrosion of the wellhead flanges and associated bolts were evident at the time of inspection. The wellhead slab is free of cracks and no intrusive vegetation or ponding water was observed.

Injection capacity. The maximum injection rate could not be attained during the test due to the instability of the plant to supply flow at higher injection rates. Using the elevation of the injection port (32.3 ft msl) as the maximum allowable water elevation, a theoretical well capacity was developed by extrapolating known data points. This linear extrapolation is presented in Figure 3. The estimated injection capacity for this test round was calculated to be approximately 39 gpm/ft (0.06 mgd/ft). This injection capacity is 1% less than the last evaluation in January 2004. Results have been fairly consistent since January 2002.

The theoretical well capacity was determined to be 1,138 gpm. The theoretical well capacity is simply an estimate based on the available head in the well, and does not accurately reflect hydraulic constraints in the flow distribution network.

Table 3 below summarizes the injection capacities in previous UIC evaluations for Well 1 (theoretical well capacities were not calculated prior to the June 1998 UIC evaluation).

Table 3. Historical injection capacity summary for LWWRF Well 1

UIC Report	Test Date	Max Flow Rate Achieved (gpm)	Estimated Injection Capacity (gpm/ft)	Theoretical Well Cap.[a]	
				gpm	mgd
1	July-94	1,000	50	N/A	N/A
2	Jun-95	1,300	65	N/A	N/A
3	Apr-96	900	40	N/A	N/A
4[b]	Mar-97	N/A	N/A	N/A	N/A
5[b]	Sept-97	1,400	70	N/A	N/A
6	Jun-98	2,000	100	2,600	3.7
7	Dec-98	1,500	75	2,000	2.9
8	Jun-99	1,600	70	2,100	3.0
9	Jan-00	1,300	57	1,637	2.4
10	Aug-00	1,100	65	1,892	2.7
11	Jan-01	1,020	47	1,371	2.0
12	July-01	1,100	55	1,598	2.3
13	Jan-02	870	37	1,064	1.5
14	July-02	980	42	1,215	1.7
15	Jan-03	1,050	52	1,504	2.2
16	July-03	1,000	51	1,461	2.1
17	Jan-04	900	40	1,085	1.6
18	July-04	900	39	1,138	1.6

[a] theoretical well capacities were extrapolated using known data point, if available head existed at the maximum flow rate achieved during testing.

[b] evaluation performed by R. M. Towill/GeoLabs - values shown only for added perspective

Injection well failures. There have been no documented failures of Well 1. Based on the July 2004 inspection and performance evaluation, well failure is unlikely in the near future.

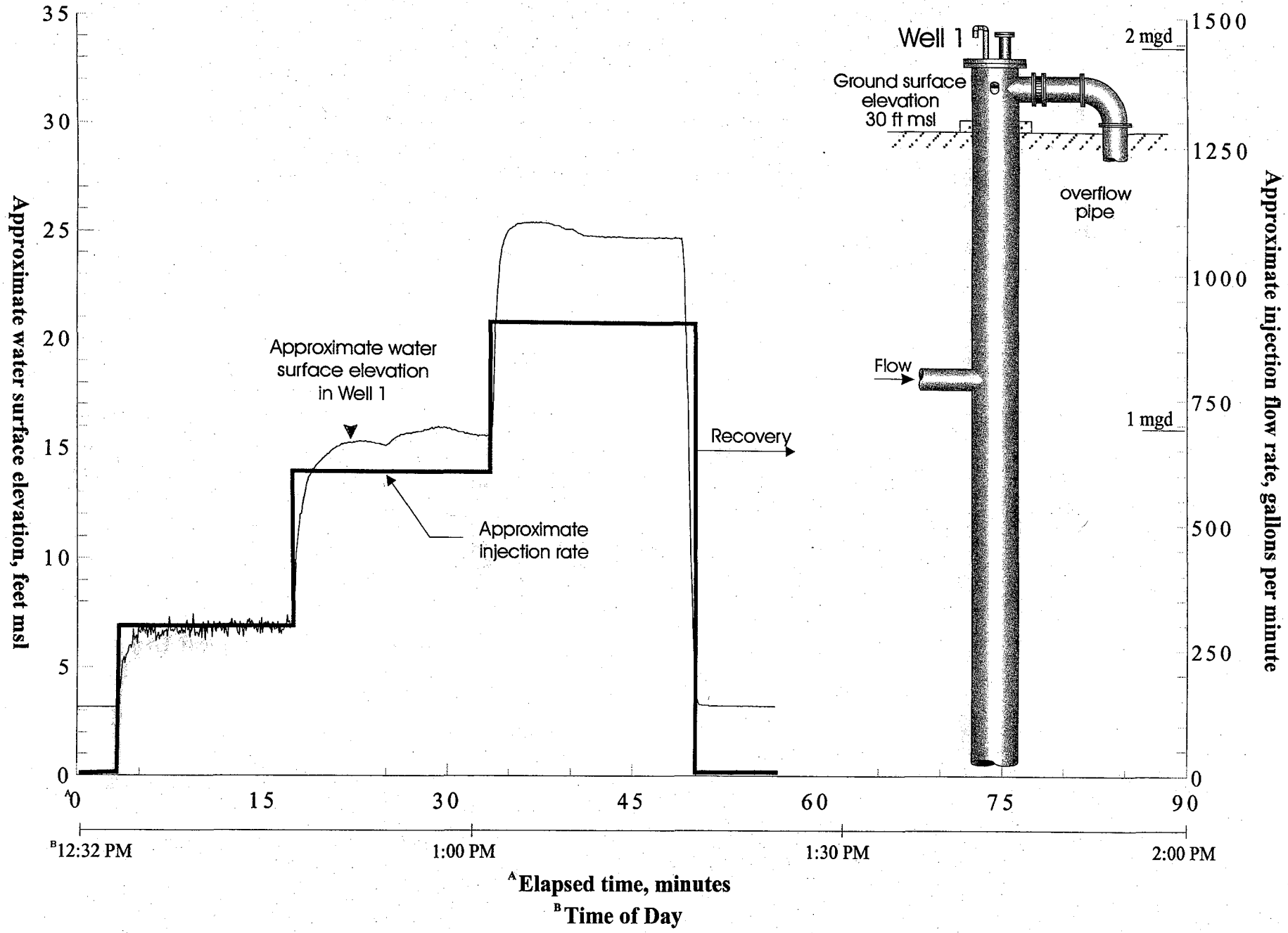


Figure 2. Water level in LWWRF Well 1 during injection evaluation

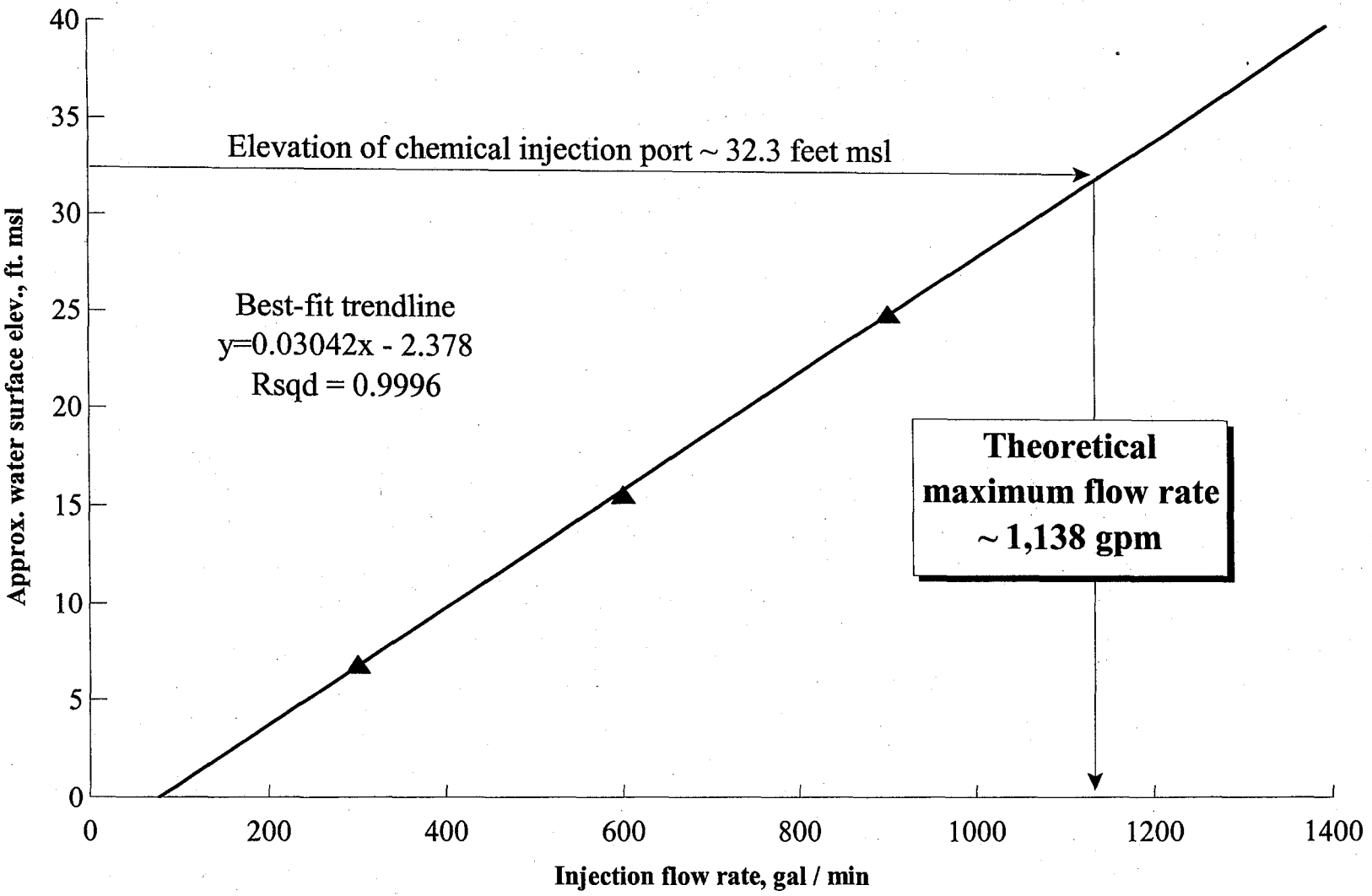


Figure 3. Linear Extrapolation of LWWRF Well 1 Injection Test Data

LWWRF Well 2 Performance Evaluation

Well 2 was closed for approximately 0.5 hours prior to testing on July 22, 2004 At 9:00 AM the static water level was measured by a Solinst depth sounder to be approximately 3.03 feet msl. Starting at about 9:10 AM, Well 2 was tested at three different flowrates. These flowrates and their corresponding water levels are shown in Table 4.

Table 4. Flow rate versus water surface elevation at LWWRF Well 2

Flow rate (gpm)	Flow rate (mgd)	Water surface elevation (ft msl)
1,000	1.44	9.63
1,500	2.16	11.97
2,300	3.31	12.58
3,400	4.98	11.76

To achieve the desired flow rates used during the test, Wells 1 and 3 were closed completely. During the third step Well 4 was partially closed. At the highest flow rate there was about 19.7 feet of freeboard in the well. It was observed during the difficult adjustment of the injection rate to the third step that injection rates approaching 7.0 mgd for short durations of time did not show a great increase in well level. Upon termination of injection at 10:36 AM, the well recovered fully in approximately 8 minutes. . In Figure 4, a graphic illustration of the approximate water surface elevation during testing and recovery of Well 2 is presented.

Injection wellhead and ground surface conditions. Well 2 is located just east of the operations building, about 120 feet south of Well 1. The inspection group saw no indication or evidence of leaking from the well or vault. The wellhead and adjacent flow meter vault appeared to be in good condition. Minor corrosion of the wellhead flanges and associated bolts was evident at the time of inspection. The wellhead slab is free of cracks. The flow control valve locate at the well head was recently replaced due to a broken stem. No intrusive vegetation or ponding water was observed. It was noted that the several bolts on pipe flanges within the meter vault that were observed to be experiencing significant corrosion were replaced.. Photos of the well and vault can be found in the appendix.

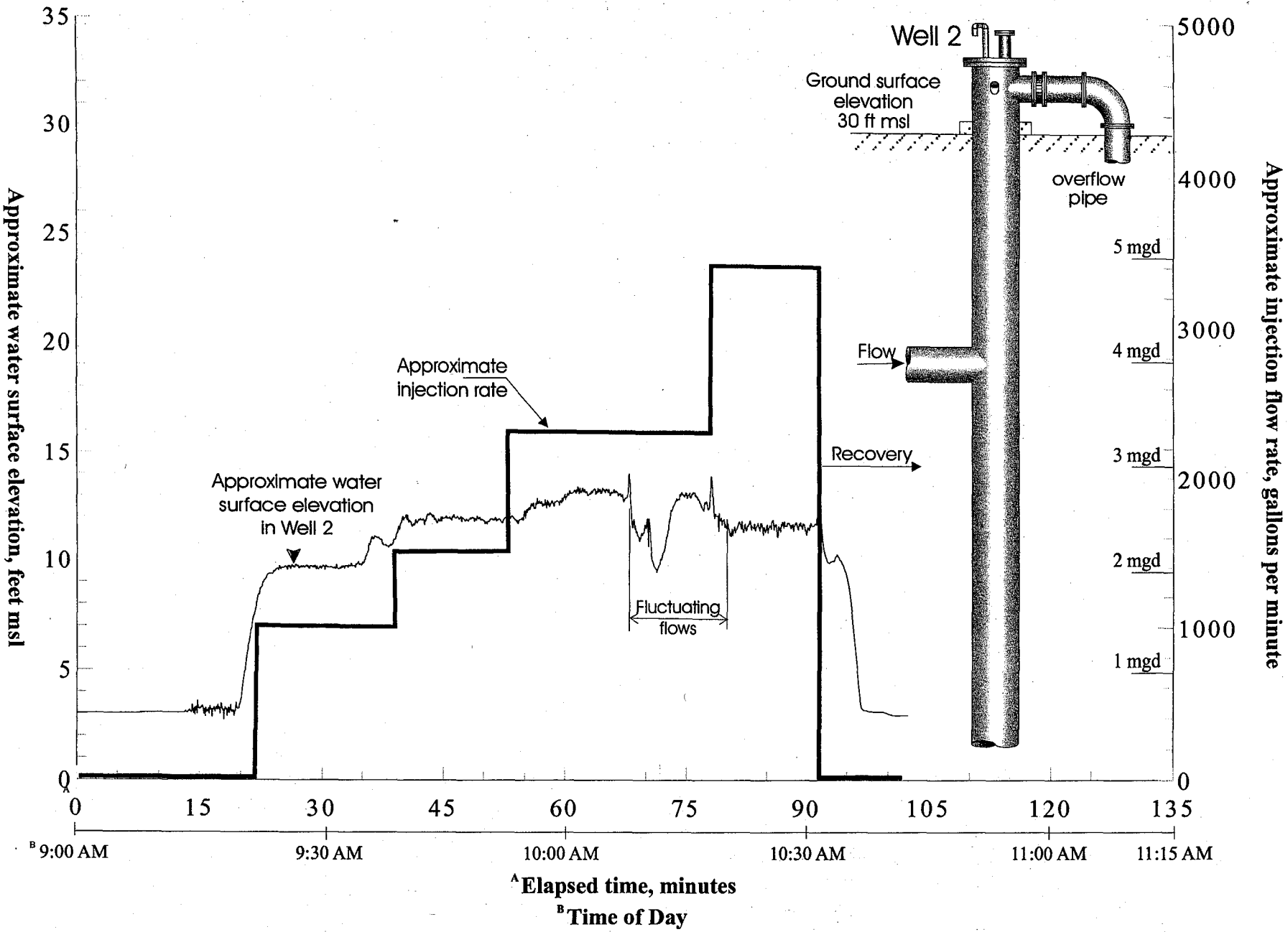


Figure 4. Water level in LWWRF Well 2 during injection evaluation

Injection capacity. The maximum injection rate could not be attained during the test because of limitations in available plant flow and the high capacity of the well. Using the elevation of the injection port (32.3 ft msl) as the maximum allowable water elevation, a theoretical well capacity was developed by extrapolating the test data. This linear extrapolation is presented in Figure 5.

The estimated injection capacity for this test round was calculated using regression analysis to be approximately 1,076 gpm/ft (1.55 mgd/ft). The estimated injection capacity represents an increase of approximately 25% over the last evaluation. The theoretical well capacity was found to be about 31,483 gpm (45.3 mgd). The theoretical capacity is simply an estimate derived from the available head in the well, and does not accurately reflect hydraulic constraints in the flow distribution network. The results are further skewed by the narrow range of testing due to a lack of available plant flow (well testing is performed at the minimum injection capacity). The staff did note short duration (approx. 1 minute) flows approaching 7,000 gpm with little increase in well height over the maximum achieved during testing. We can also note that the theoretical capacity of the well is very similar to that recorded when the well was originally constructed, and is at about six times greater than the daily plant flows. Table 5 below summarizes the injection capacities and theoretical well capacity of Well 2.

Table 5. Historical injection and well capacity summary for LWWRF Well 2

UIC Report	Test Date	Max Flow Rate Achieved (gpm)	Estimated Injection Capacity (gpm/ft)	Theoretical Well Cap.[a]	
				gpm	mgd
1	July-94	4,200	700	N/A	N/A
2	Jun-95	4,200	500	>6,300	>9.0
3	Apr-96	4,200	510	>6,600	>9.5
4[b]	Mar-97	3,100	240	3,100	4.4
5[b]	Sept-97	6,200	560	>6,300	>9.0
6	Jun-98	7,000	750	22,400	32.2
7	Dec-98	4,200	940	22,500	32.4
8	Jun-99	7,600	1,035	30,800	44.4
9	Jan-00	6,000	4,985	146,429	210.9
10	Aug-00	4,200	7,044	206,684	297.6
11	Jan-01	5,500	4,741	139,308	200.6
12	July-01	5,700	2,425	70,601	101.7
13	Jan-02	6,000	1,652	48,219	69.4
14	July-02	4,000	917	26,985	38.9
15	Jan-03	5,000	971	28,191	40.6
16	July-03	3,300	648	18,790	27.1
17	Jan-04	4,200	858	25,116	36.2
18	July-04	3,400	1,076	31,483	45.3

[a] theoretical well capacities were extrapolated using known data point, if available head existed at the maximum flow rate achieved during testing.

[b] evaluation performed by R. M. Towill/GeoLabs - values shown only for added perspective

Injection well failures. There have been no documented failures of Well 2. Based on the July 2004 inspection and performance evaluation, well failure is unlikely in the near future.

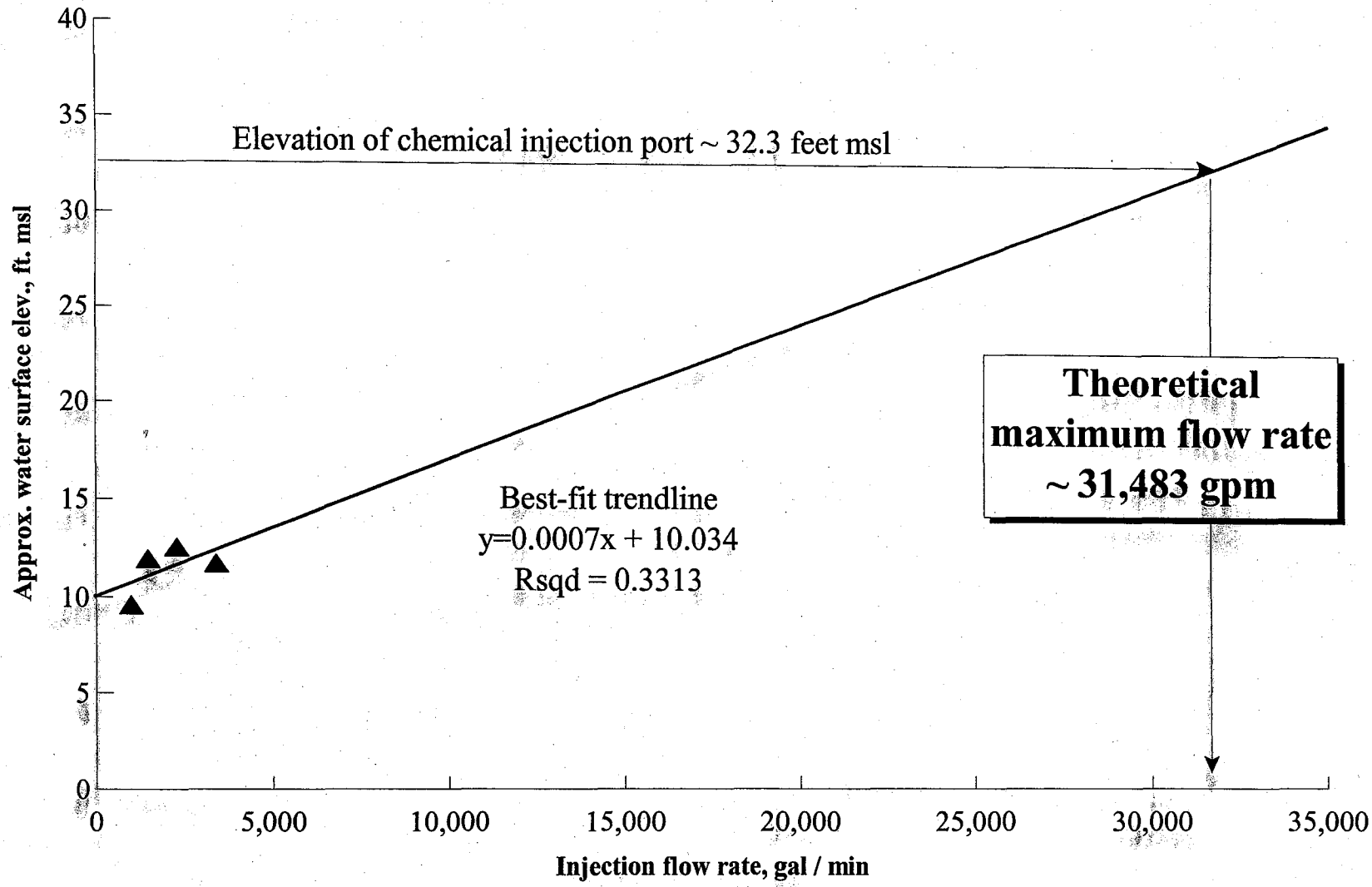


Figure 5. Linear Extrapolation of LWWRF Well 2 Injection Test Data

LWWRF Well 3 Performance Evaluation

Well 3 had not received effluent for approximately 45 minutes prior to testing, ensuring a static water level had been attained. At 10:28AM on July 9, 2004, the static water level was measured by a Solinst depth sounder to be approximately 3.11 feet msl. Starting at 10:38 AM, Well 3 was tested at three different flow rates. These flow rates and their corresponding water levels are shown below in Table 6.

Table 6. Flow rate versus water surface elevation at LWWRF Well 3

Flow rate (gpm)	Flow rate mgd	Water surface elevation (ft msl)
400	0.58	9.98
600	0.87	15.98
950	1.37	25.10

To achieve the maximum flowrate Well 2 was closed, directing the majority of plan flow to Wells 3 and 4. The peak water elevation of 25.10 feet msl was about six inches below the elevation of the chemical injection port. Upon termination of injection at 10:51 AM, the well recovered fully within 5 minutes. In Figure 6, a graphic illustration of the approximate water surface elevation during testing and recovery of Well 3 is presented. Note that the meter readings were somewhat erratic and a constant flow value was difficult to maintain. The flow rates are best estimates of the average of meter values during the test. Additionally, the well level was at the port level at the highest flow rate, indicting this to be the maximum capacity of the well.

Injection wellhead and ground surface conditions. Well 3 is located in the southern portion of LWWRF. County inspection staff saw no indication of malfunction or leaking from the wellhead. Minimal corrosion was observed near the chemical injection access port. The wellhead and flow meter vault appeared to be very well maintained. The wellhead slab is free of cracks in the concrete, and no vegetation or ponding water was observed.

Injection capacity. The maximum injection rate was again attained during the test, as indicated by the water level being at the port elevation and verified by the data reduction. Using the elevation of the injection port (26.6 ft msl) as the maximum allowable water elevation, a theoretical well capacity was developed by extrapolating the test data. This linear extrapolation is presented in Figure 7. The well capacity was determined to be about 1,000 gpm (1.44 mgd).

This well capacity is an estimate based on the available head in the well, and does not accurately reflect hydraulic constraints in the flow distribution network. The estimated injection capacity for this test round was calculated to be approximately 43 gpm/ft (0.06 mgd/ft). This represents a increased of 17% from the last evaluation. This value is slightly beeter than the last test but still maintains a below par performance when compared to original capacity values. Table 7 summarizes the injection capacities and overall estimated capacity of Well 3.

Injection well failures. There have been no documented failures of Well 3. Based on the July, 2004 inspection and performance evaluation, well deterioration is apparent and measures such as air burst cleaning should be scheduled to check the trend. Although flow capacity remains a current issue, it seems to have stabilized and total failure is unlikely in the near future.

Table 7. Historical injection capacity summary for LWWRF Well 3

UIC Report	Test Date	Max Flow Rate Achieved (gpm)	Estimated Injection Capacity (gpm/ft)	Theoretical Well Cap.[a]	
				gpm	mgd
1	July-94	200	50	200	0.3
2	Jun-95	2,700	150	3,500	5.0
3	Apr-96	2,400	110	2,400	3.5
4[b]	Mar-97	N/A	410	2,800	4.0
5[b]	Sept-97	3,300	420	N/A	N/A
6	Jun-98	3,100	270	6,500	9.4
7	Dec-98	2,900	185	4,200	6.0
8	Jun-99	3,000	155	3,700	5.4
9	Jan-00	2,500	124	2,900	4.2
10	Aug-00	3,100	248	5,887	8.5
11	Jan-01	2,180	129	3,076	4.4
12	July-01	1,725	78	1,831	2.6
13	Jan-02	1,550	73	1,715	2.5
14	July-02	1,450	72	1,714	2.5
15	Jan-03	1,200	57	1,337	1.9
16	July-03	1,050	46	1,057	1.5
17	Jan-04	840	36	850	1.2
18	July-04	950	43	1,000	1.4

[a] theoretical well capacities were extrapolated using known data point, if available head existed at the maximum flow rate achieved during testing.

[b] evaluation performed by R. M. Towill/GeoLabs - values shown only for added perspective

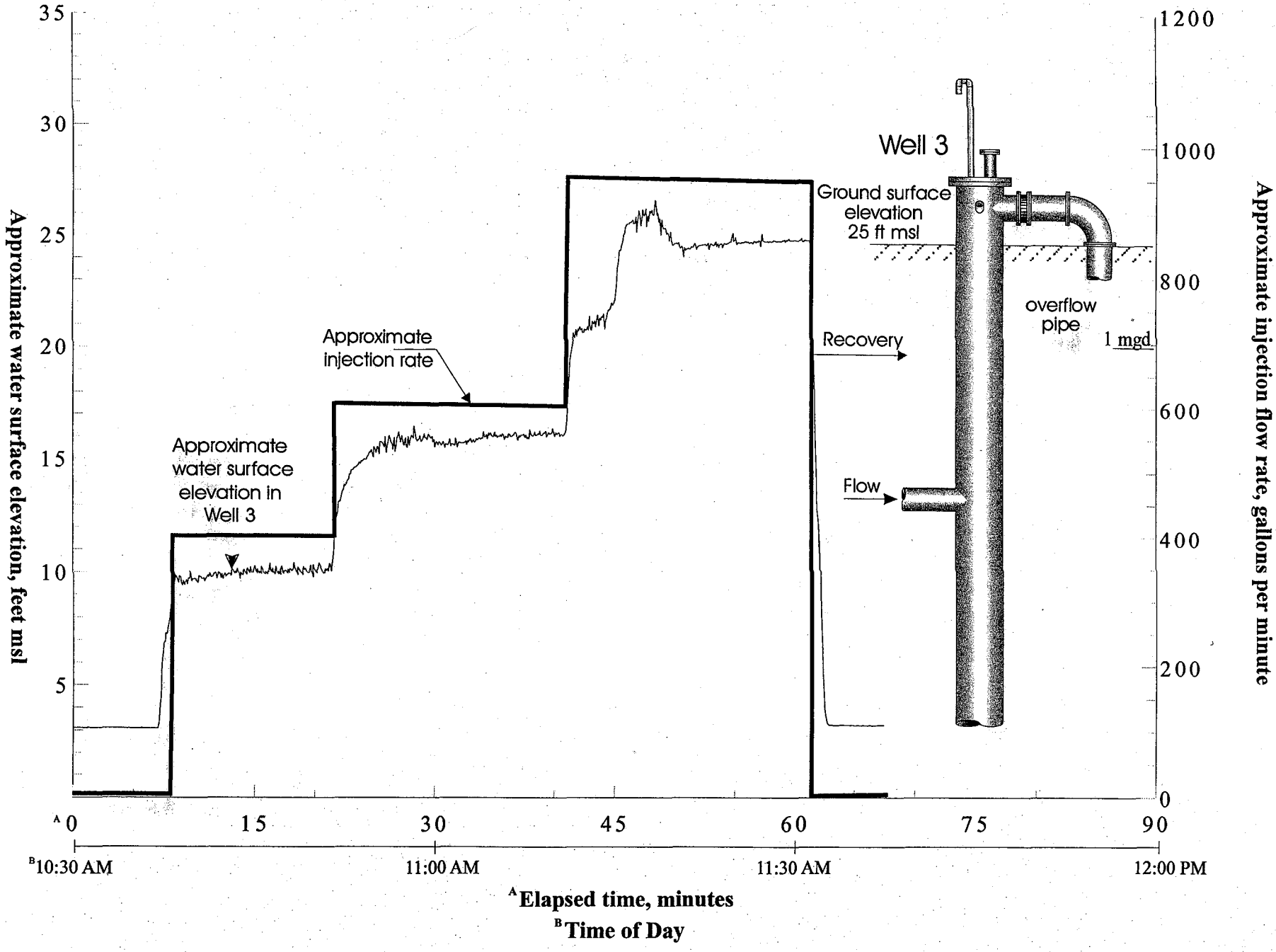


Figure 6. Water level in LWWRF Well 3 during injection evaluation

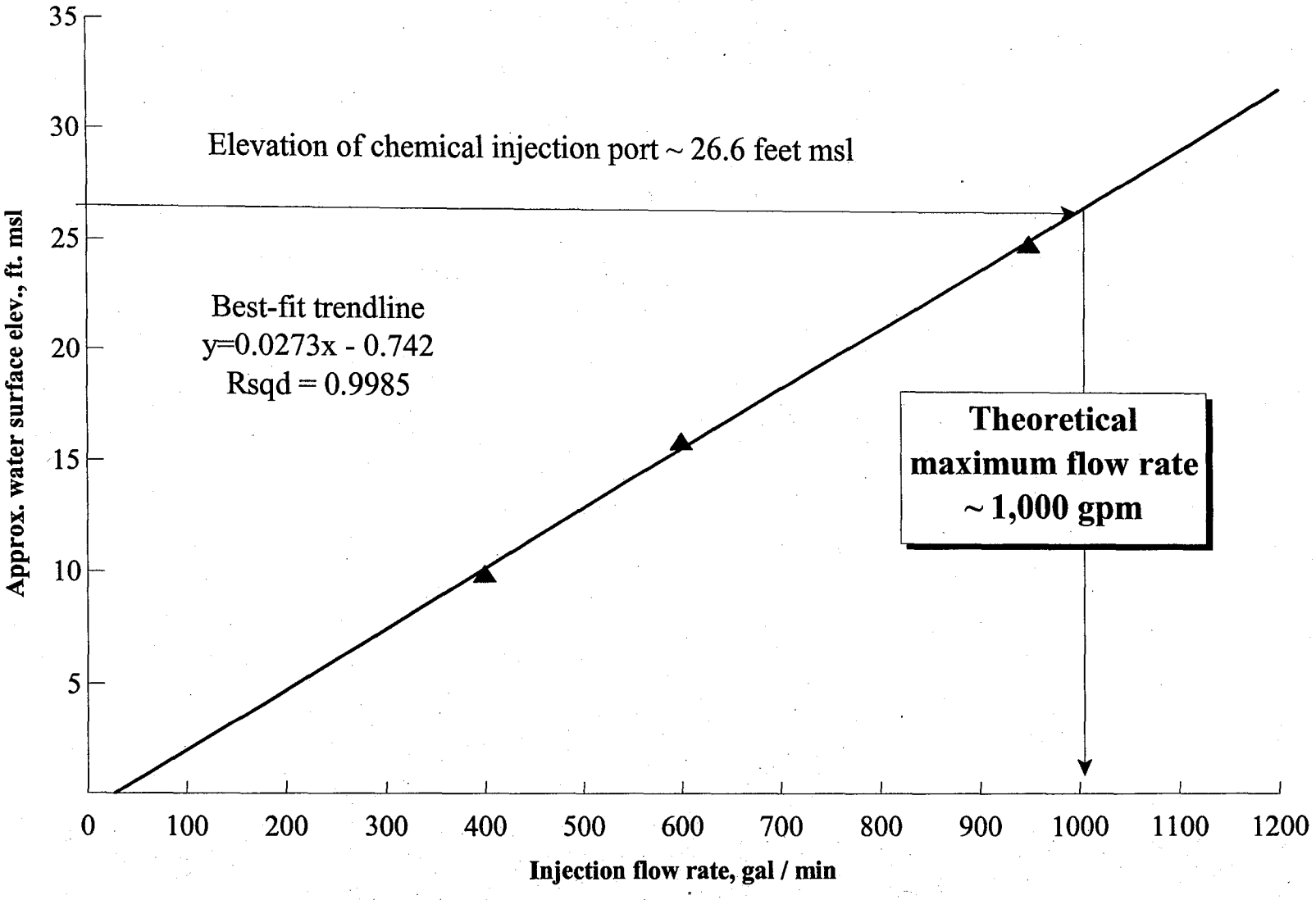


Figure 7. Linear Extrapolation of LWWRF Well 3 Injection Test Data

LWWRF Well 4 Performance Evaluation

Well 4 was closed approximately one half hour prior to testing on July 22, 2004. At 11:20 AM, the static water level was measured by a Solinst depth sounder to be approximately 3.39 feet msl. Starting at about 11:30 AM, Well 4 was tested at four different flowrates. These flowrates and their corresponding water levels are shown in Table 8.

Table 8. Flow rate versus water surface elevation at LWWRF Well 4

Flow rate (gpm)	Flow rate (mgd)	Water surface elevation (ft msl)
700	1.01	10.79
1,400	2.02	17.78
1,900	2.74	22.26
2,000	2.88	22.90

To achieve the maximum flow rate, Well 3 was completely closed and well 2 was partially closed, directing the plant flow to Well 4. The peak water elevation of 22.90 feet msl was about 5.3 feet below the elevation of the chemical injection port. Upon termination of injection at 12:30 PM, the well recovered completely in approximately five minutes. In Figure 8, a graphic illustration of the approximate water surface elevation during testing and recovery of Well 4 is presented.

Injection wellhead and ground surface conditions. Well 4 is located in the southern portion of LWWRF. The wellhead and flow meter vault appeared to be well maintained, and the County personnel saw no indication of leaking from the well. Some minor corrosion was observed on the wellhead. The wellhead slab was free of cracks in the concrete and no ponding water was observed.

Injection capacity. The maximum injection rate could not be attained during the test because of limitations in total plant flow and the high capacity of the well. Using the elevation of the injection port (27.5 ft msl) as the maximum allowable water elevation, a theoretical well capacity of 2,471 (3.56 mgd) was estimated by extrapolating the test data. This linear extrapolation is presented in Figure 9. The estimated injection capacity for this test round was calculated to be approximately 102 gpm/ft (0.15 mgd/ft). This injection capacity represents a 6 percent increase since the last evaluation. The theoretical well capacity is simply an estimate derived from the

available head in the well, and does not accurately reflect hydraulic constraints in the flow distribution network. Table 9 below summarizes the injection capacities and overall estimated capacity of Well 4.

Table 9. Historical injection capacity summary for LWWRF Well 4

UIC Report	Test Date	Max Flow Rate Achieved (gpm)	Estimated Injection Capacity (gpm/ft)	Theoretical Well Cap.[a]	
				gpm	mgd
1	July-94	200	N/A	200	0.3
2	Jun-95	3,300	220	4,900	7.0
3	Apr-96	3,800	250	6,250	9.0
4[b]	Mar-97	3,000	N/A	5,100	7.3
5[b]	Sept-97	3,100	280	7,500	10.8
6	Jun-98	6,700	500	12,400	17.9
7	Dec-98	2,350	245	5,600	8.0
8	Jun-99	2,600	160	3,900	5.7
9	Jan-00	3,000	217	5,300	7.6
10	Aug-00	3,200	259	6,244	9.0
11	Jan-01	2,750	248	6,131	8.8
12	July-01	2,600	145	3,526	5.1
13	Jan-02	2,550	131	3,180	4.6
14	July-02	2,600	148	3,630	5.2
15	Jan-03	2,600	187	4,550	6.6
16	July-03	2,300	156	3,800	5.5
17	Jan-04	2,000	97	2,334	3.4
18	July-04	2,000	102	2,471	3.56

[a] theoretical well capacities were extrapolated using known data point, if available head existed at the maximum flow rate achieved during testing.

[b] evaluation performed by R. M. Towill/GeoLabs - values shown only for added perspective

Injection well failures. There have been no documented failures of Well 4. Based on the July 2004 inspection and performance evaluation it appears that there is a slight downward trend in the well capacity. Future tests should be closely monitored to verify this trend and recommend corrective actions if necessary. Based on the most recent tests we would not anticipate that well failure is likely in the near future.

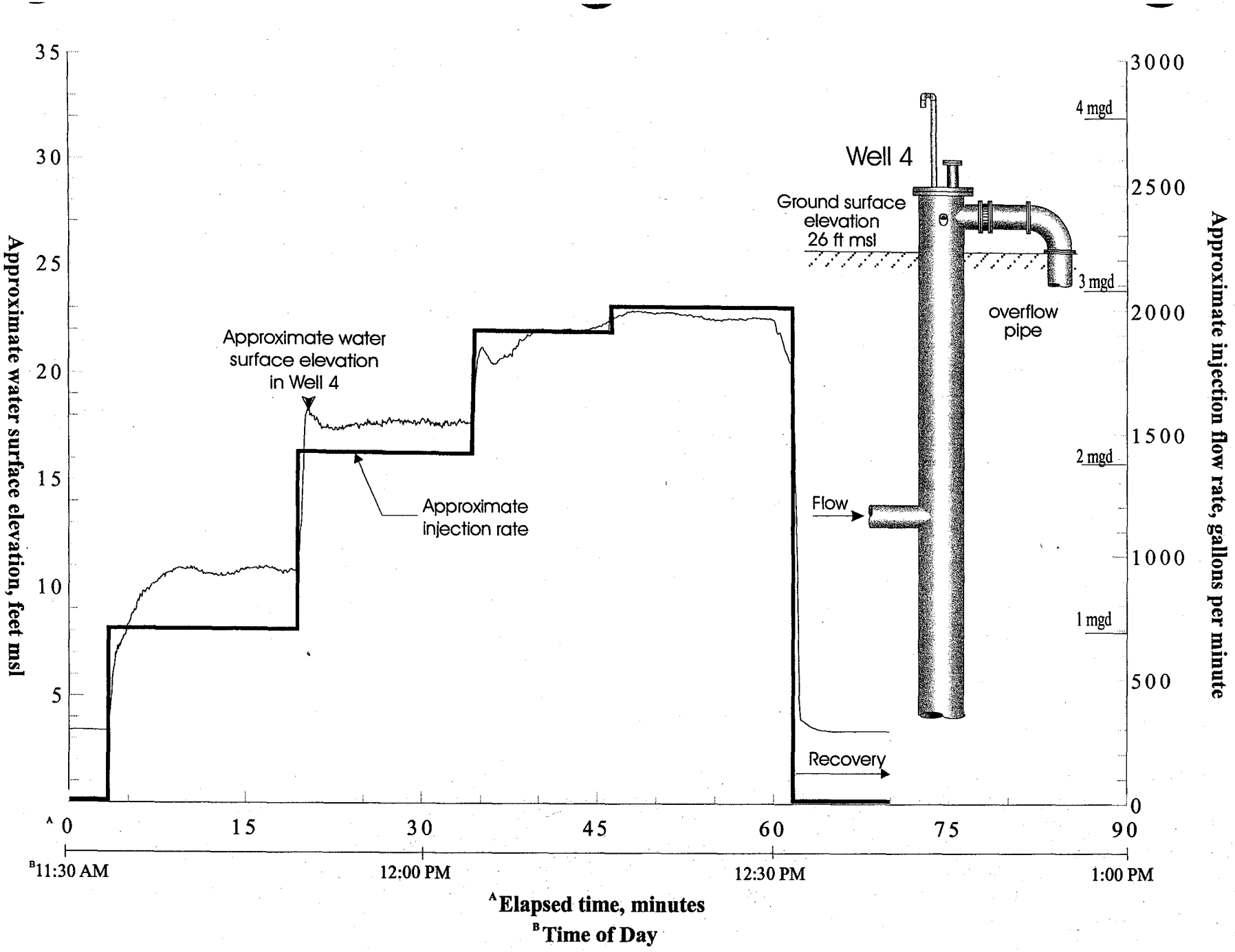


Figure 8. Water level in LWWRF Well 4 during injection evaluation

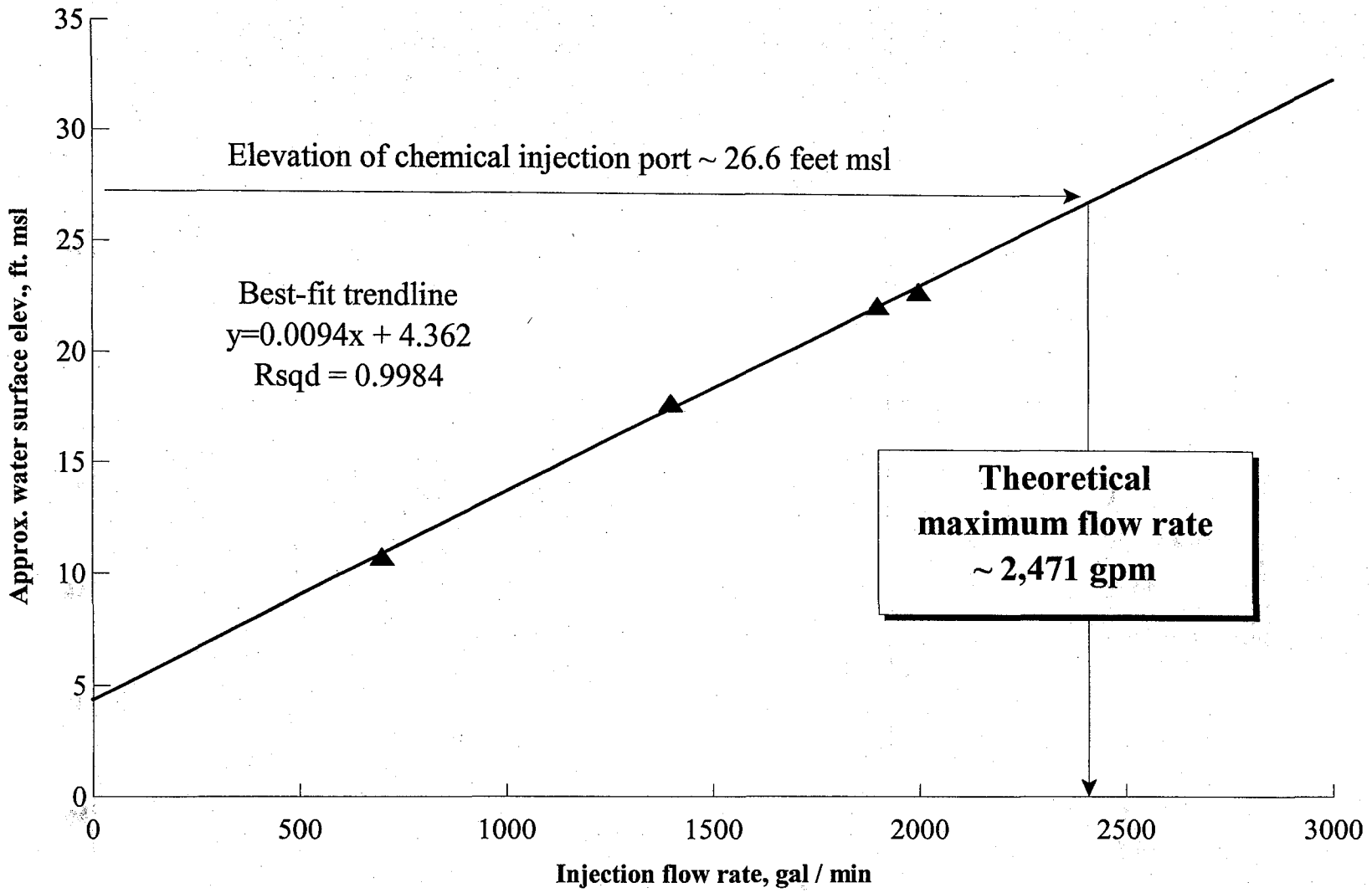


Figure 9. Linear Extrapolation of LWWRF Well 4 Injection Test Data

CONCLUSIONS AND RECOMMENDATIONS

Except where noted, maintenance of the wells has been adequate. Once again the evaluation staff recommends the continuation of the current maintenance program with an emphasis on corrosion control and well cleaning. The wellheads did not exhibit any significant signs of cracks in the concrete and were free of debris. Minor corrosion at the flanges, bolts, and chemical injection access ports was once again noted and warrants touch-up work. The meter vaults were relatively clean and were free of standing water.

During this evaluation the maximum injection capacity was only reached on Well No. 3. Consequently, maximum injection capacities were estimated by linearly extrapolating data collected during testing for the other three wells. It is recommended that the low capacity in Well 3 be closely monitored and cleaning with the airbust method be scheduled in the near future. Based on the data collected, Well 4 may need a similar cleaning in the foreseeable future.

A summary of the injection capacities of each well is presented in Table 10 below.

Table 10. Injection capacity test results

Well No.	Estimated Injection Capacity (gpm/ft.)	Theoretical Injection Capacity (mgd)
1	39	1.64
2	1,076	45.34
3	43	1.44
4	102	3.56
TOTAL	1,260	51.98

It was determined that the theoretical well capacity of the injection well system as a whole was estimated at approximately 52 mgd. This represents an increase in well capacity of approximately 23% over the estimate of the previous tests. Figure 10 shows the historical theoretical well system capacity. It is noted that the majority of the flow capacity rests with Well No. 2. This well

has historically demonstrated large fluctuations (due to high capacity and limited testing rates) thus skewing the graph. The relatively stable capacities exhibited in Wells 1, 3 and 4

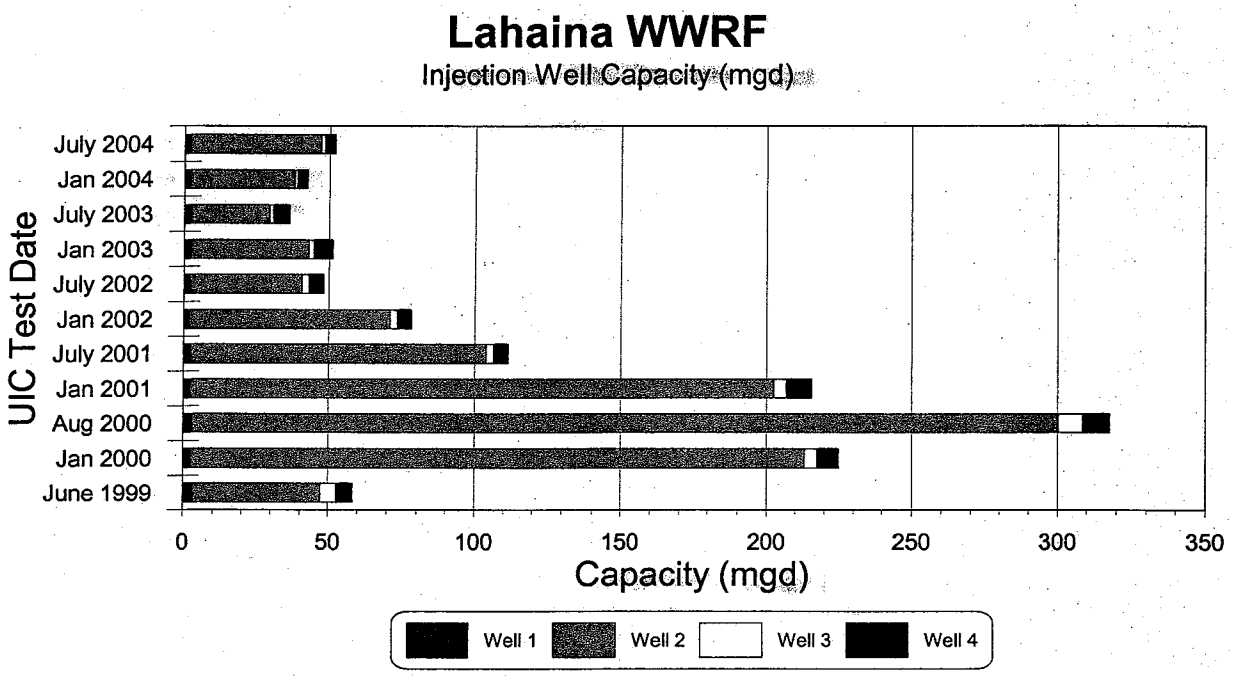


Figure 10: Lahaina WWRF Historical Injection Capacity

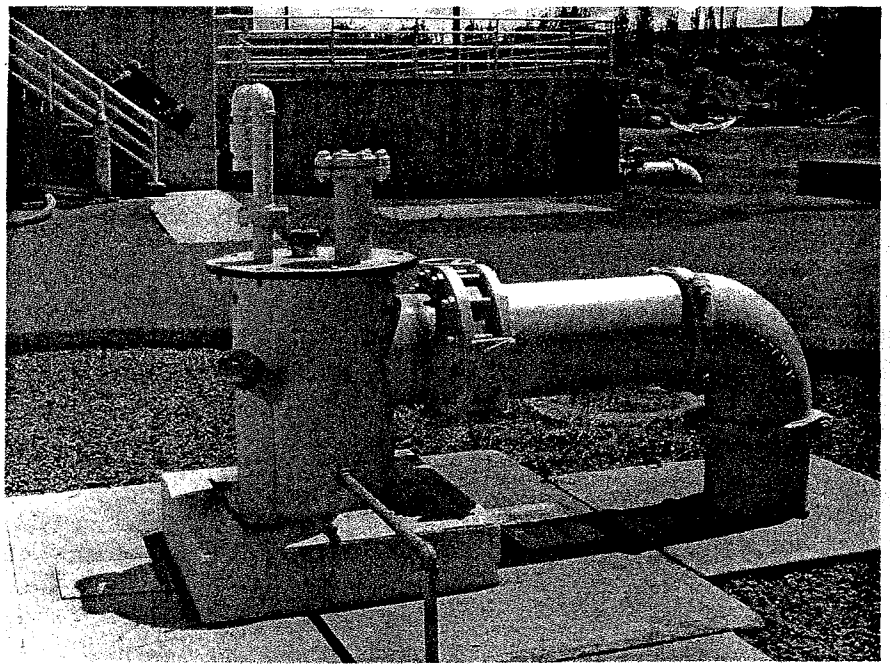
demonstrates that current cleaning procedures and water quality are helping to maintain well integrity and not degrading capacity potential. It is noted that the overall capacity remains considerably higher than the potential flow to the facility (over ten times the daily average flow, over five times the plant capacity.) These wells should, however, be observed for any new capacity variations. It must be recognized that the redundancy of the well system greatly diminishes the possibility of a failure of the effluent distribution system.

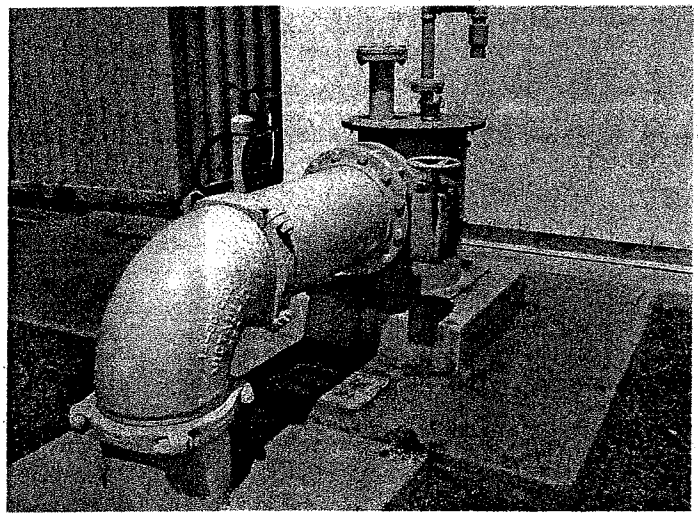
Lahaina WWRF Injection Wells 1 -4
UIC Status Report No. 18

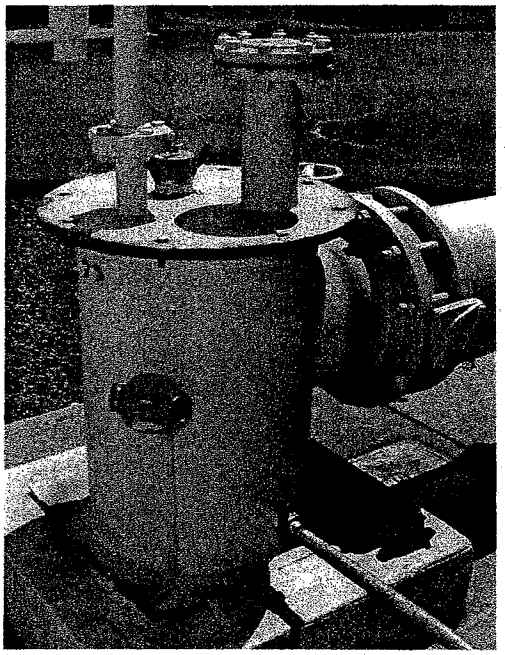
Appendix

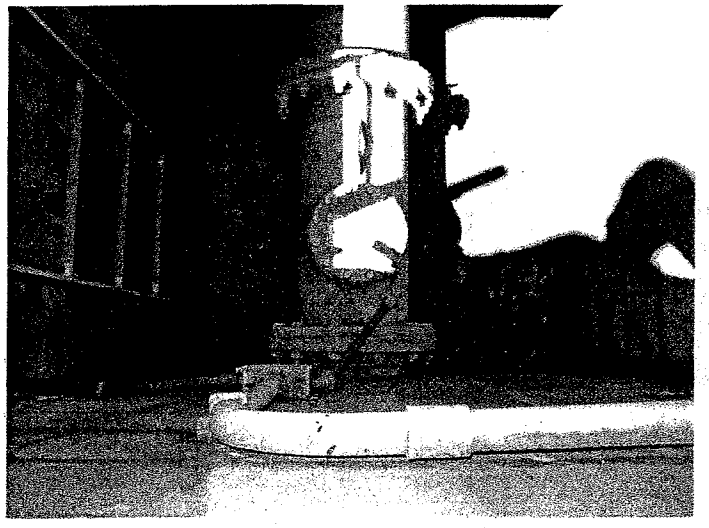
Injection Well and Wellhead Photographs

July 2004

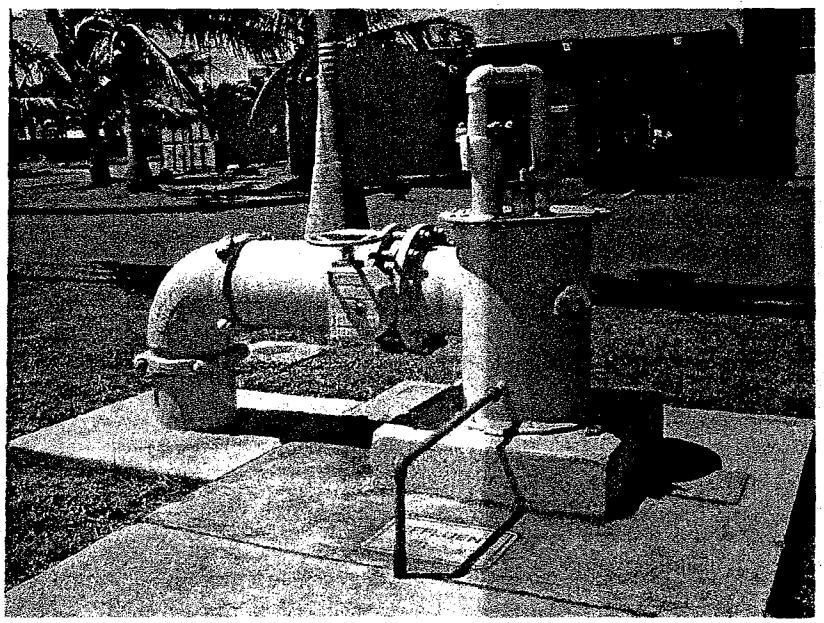


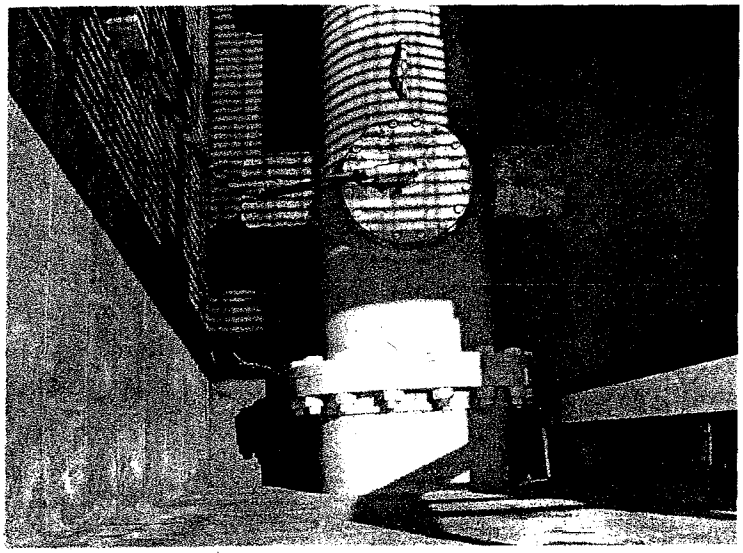


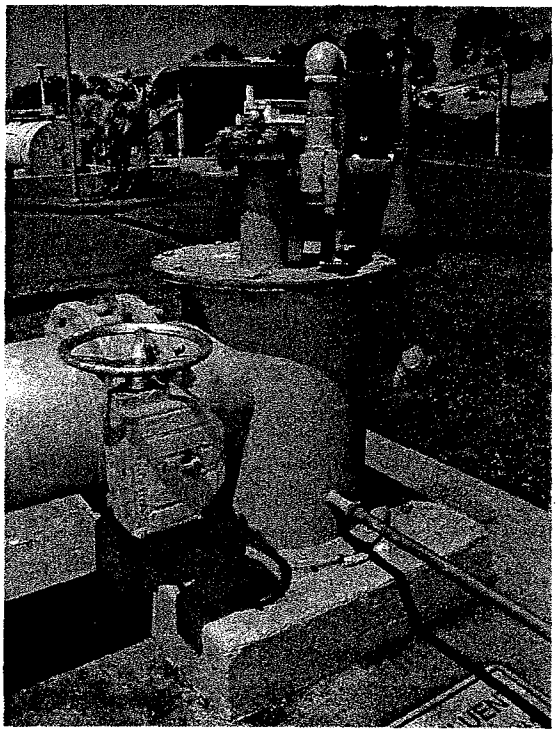


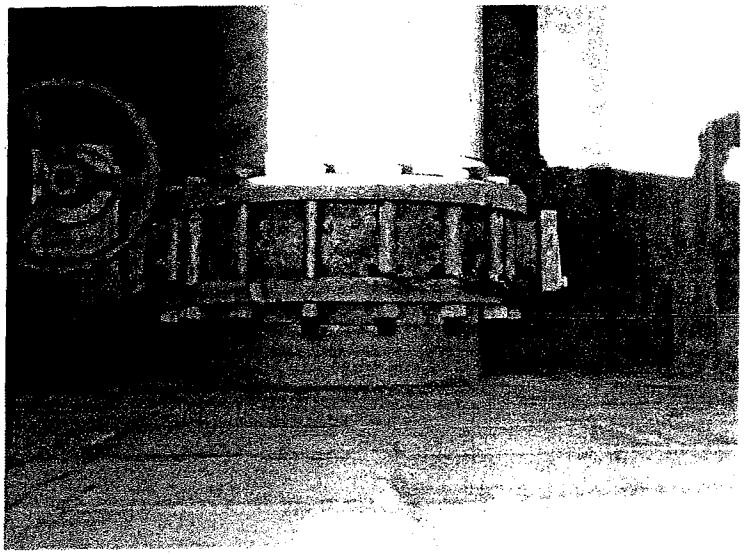


Lahania WWRF
Injection Well No. 1
July 2004



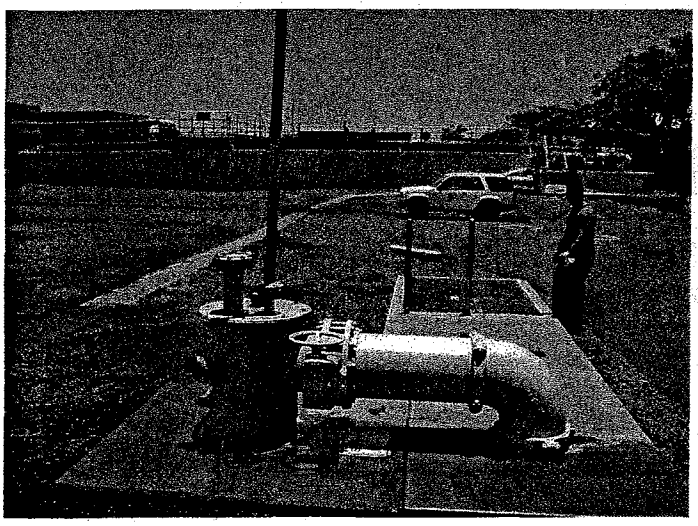


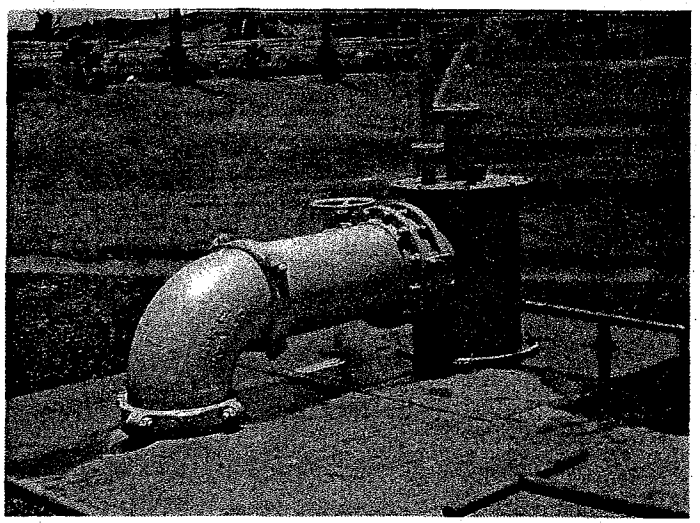


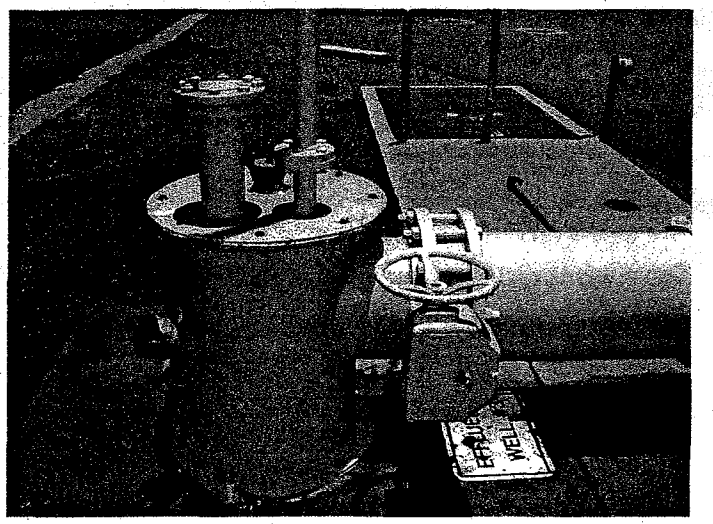


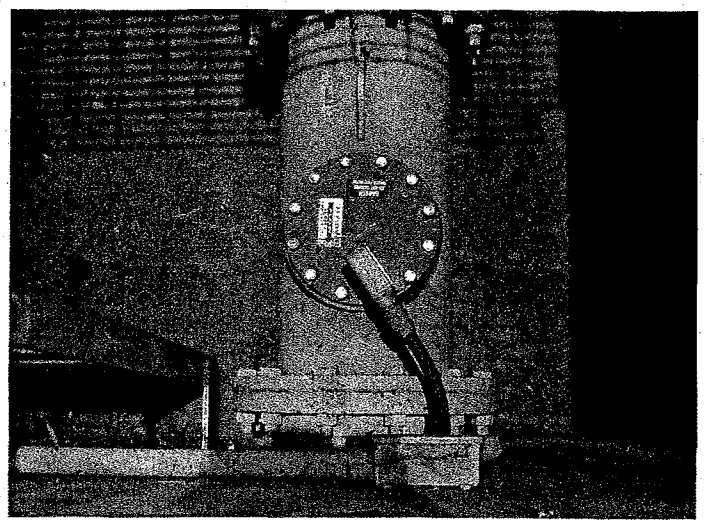
Replaced Bolts in Meter Box

Lahania WWRF
Injection Well No. 2
July 2004

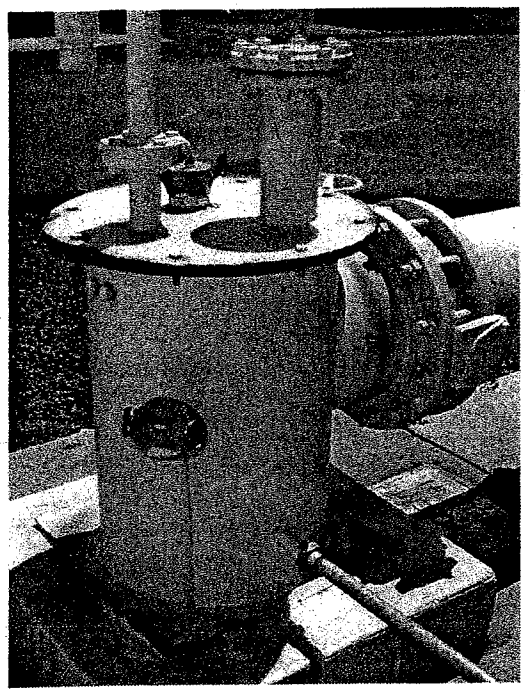


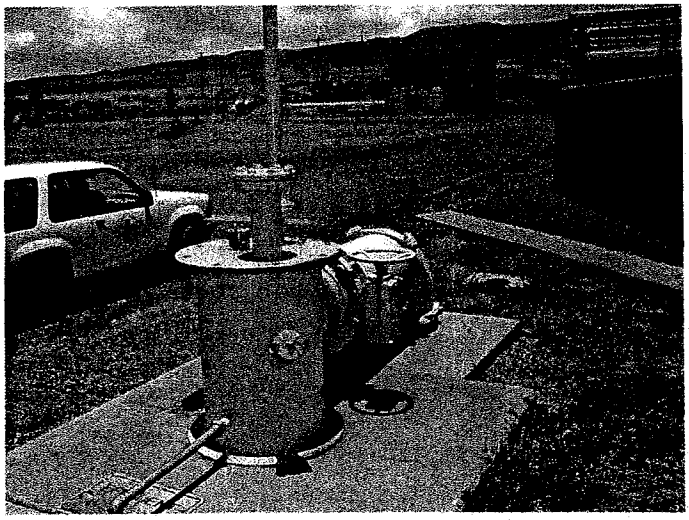


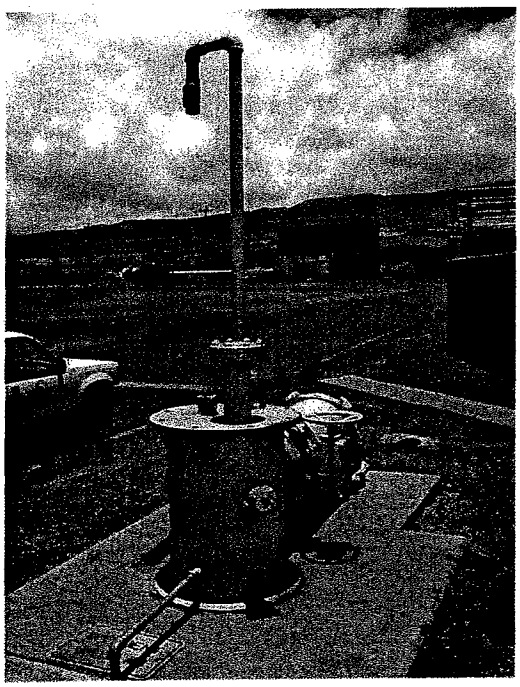


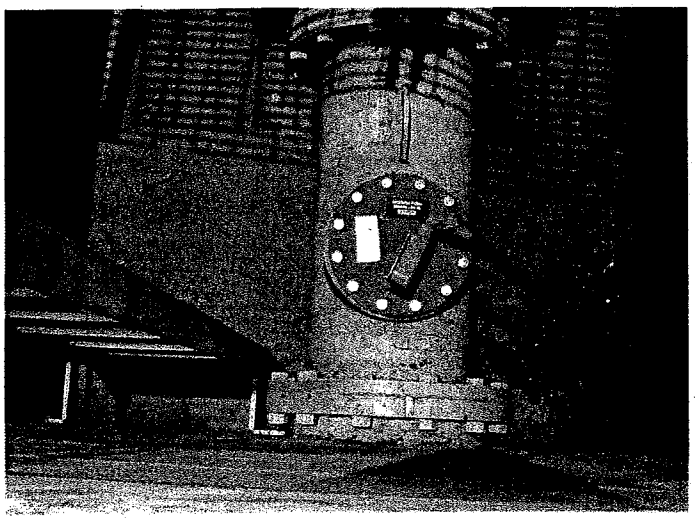


Lahania WWRF
Injection Well No. 3
July 2004









Lahania WWRF
Injection Well No. 4
July 2004

LAHAINA WASTEWATER RECLAMATION FACILITY
NITROGEN TESTING
REPORTING PERIOD OCTOBER, NOVEMBER, DECEMBER 2003

I. ANALYSIS

A. Performed by Robert Rychlinski, Sanitary Chemist

B. Standard Methods 4500-Norg Macro-Kjeldahl

C. Standard Methods 4500-NH3 Titrametric Method

D. Standard Methods 4500 NO3-NO2 Automated Cadmium Reduction

II SAMPLE COLLECTIONS

A. Influent samples collected at headworks building.

B. Effluent samples collected at distribution box.

C. Each of the influent and effluent are flow proportioned composite samples.

LAHAINA WASTEWATER RECLAMATION FACILITY
LABORATORY REPORT
REPORTING PERIOD FOR OCTOBER, NOVEMBER, DECEMBER 2003

SAMPLE	DATE/TIME	NH3-N mg/L	O-N mg/L	TKN mg/L	NO3-N02 mg/L	TN mg/L
Influent	10/2-10/3	20.8	11.1	31.9		
Final Eff	0830-0730	ND	1.82	1.82	5.64	7.46
Influent	10/6-10/7	14.7	10.1	24.8		
Final Eff	0830-0730	ND	1.12	1.12	3.93	5.05
Influent	10/15-10/16	15.0	11.9	26.9		
Final Eff	0830-0730	0.04	1.01	1.05	5.03	6.08
Influent	10/20-10/21	15.8	12.0	27.8		
Final Eff	0830-0730	0.28	1.64	1.92	4.43	6.35
Influent	10/27-10/28	16.5	9.3	25.8		
Final Eff	0830-0730	0.21	1.40	1.61	4.09	5.70
Influent	11/2-11/3	16.2	10.1	26.3		
Final Eff	0830-0730	0.43	1.53	1.96	2.13	4.09
Influent	11/9-11/10	17.3	12.4	29.7		
Final Eff	0830-0730	0.49	1.68	2.17	3.57	5.74
Influent	11/16-11/17	15.3	10.2	25.5		
Final Eff	0830-0730	0.21	1.96	2.17	3.82	5.99
Influent	11/23-11/24	16.4	11.2	27.6		
Final Eff	0830-0730	ND	1.76	1.76	3.50	5.26
Influent	12/2-12/3	15.4	12.7	28.1		
Final Eff	0830-0730	0.28	1.75	2.03	4.82	6.85
Influent	12/7-12/8	13.8	15.0	28.8		
Final Eff	0830-0730	ND	1.61	1.61	3.89	5.50
Influent	12/14-12/15	15.4	7.7	23.1		
Final Eff	0830-0730	ND	1.75	1.75	4.74	6.49
Influent	12/25-12/26	17.2	12.5	29.7		
Final Eff	0830-0730	2.49	1.64	4.13	3.67	7.80
Influent	12/28-12/29	18.5	11.0	29.5		
Final Eff	0830-0730	2.24	1.58	3.82	3.99	7.81

Abbreviations: NH3-N (Ammonia-Nitrogen), O-N (Organic Nitrogen), TKN (Total Kjeldahl Nitrogen), NO3-NO2 (Nitrate-Nitrite), TN (Total Nitrogen), ND (None Detected),

LAHAINA WASTEWATER RECLAMATION FACILITY
NITROGEN TESTING
REPORTING PERIOD JANUARY, FEBRUARY, MARCH 2004

I. ANALYSIS

A. Performed by Robert Rychlinski, Sanitary Chemist

B. Standard Methods 4500-Norg Macro-Kjeldahl

C. Standard Methods 4500-NH3 Titrametric Method

D. Standard Methods 4500 NO3-NO2 Automated Cadmium Reduction

II SAMPLE COLLECTIONS

A. Influent samples collected at headworks building.

B. Effluent samples collected at distribution box.

C. Each of the influent and effluent are flow proportioned composite samples.

LAHAINA WASTEWATER RECLAMATION FACILITY
LABORATORY REPORT
REPORTING PERIOD FOR JANUARY, FEBRUARY, MARCH 2004

SAMPLE	DATE/TIME	NH3-N mg/L	O-N mg/L	TKN mg/L	NO3-N02 mg/L	TN mg/L
Influent	1/5-1/6	13.4	11.5	24.9		
Final Eff	0830-0730	1.47	1.75	3.22	3.02	6.24
Influent	1/11-1/12	17.1	9.9	27		
Final Eff	0830-0730	ND	1.58	1.58	3.19	4.77
Influent	1/18-1/19	17.5	11.0	28.5		
Final Eff	0830-0730	0.28	1.48	1.76	3.27	5.03
Influent	1/25-1/26	16	12.3	28.3		
Final Eff	0830-0730	1.05	1.52	2.57	LA	
Influent	2/1-2/2	17.4	11.3	28.7		
Final Eff	0830-0730	ND	1.98	1.98	6.00	7.98
Influent	2/8-2/9	16.7	10.4	27.1		
Final Eff	0830-0730	ND	1.22	1.22	6.63	7.85
Influent	2/16-2/17	18.1	11.4	29.5		
Final Eff	0830-0730	0.84	1.64	2.48	4.33	6.81
Influent	2/22-2/23	17.8	13.9	31.7		
Final Eff	0830-0730	1.28	1.33	2.61	3.72	6.33
Influent	2/29-3/1	28.8	12.6	41.4		
Final Eff	0830-0730	ND	2.03	2.03	4.22	6.25
Influent	3/7-3/8	36.8	13.5	50.3		
Final Eff	0830-0730	1.28	1.77	3.05	4.27	7.32
Influent	3/14-3/15	18.8	13.0	31.8		
Final Eff	0830-0730	ND	2.45	2.45	6.10	8.55
Influent	3/21-3/22	16.5	17.4	33.9		
Final Eff	0830-0730	1.4	1.96	3.36	4.32	7.68
Influent	3/28-3/29	15.8	13.9	29.7		
Final Eff	0830-0730	0.56	1.74	2.30	5.68	7.98

Abbreviations: NH3-N (Ammonia-Nitrogen), O-N (Organic Nitrogen), TKN (Total Kjeldahl Nitrogen), NO3-NO2 (Nitrate-Nitrite), TN (Total Nitrogen), ND (None Detected),

LA - Lab Accident (Value may not be reliable.)

Attachment No. 1

Exhibit P-4

LAHAINA WASTEWATER RECLAMATION FACILITY
NITROGEN TESTING
REPORTING PERIOD APRIL, MAY, JUNE 2004

I. ANALYSIS

A. Performed by Robert Rychlinski, Sanitary Chemist

B. Standard Methods 4500-Norg Macro-Kjeldahl

C. Standard Methods 4500-NH3 Titrametric Method

D. Standard Methods 4500 NO3-NO2 Automated Cadmium Reduction

II SAMPLE COLLECTIONS

A. Influent samples collected at headworks building.

B. Effluent samples collected at distribution box.

C. Each of the influent and effluent are flow proportioned composite samples.

LAHAINA WASTEWATER RECLAMATION FACILITY
LABORATORY REPORT
REPORTING PERIOD FOR APRIL, MAY, JUNE 2004

SAMPLE	DATE/TIME	NH3-N mg/L	O-N mg/L	TKN mg/L	NO3-N02 mg/L	TN mg/L
Influent	4/4-4/5	17.4	15.3	32.7		
Final Eff	0830-0730	1.28	2.30	3.58	4.12	7.7
Influent	4/11-4/12	17.9	11.1	29		
Final Eff	0830-0730	1.12	1.75	2.87	5.28	8.15
Influent	4/18-4/19	18.6	10.9	29.5		
Final Eff	0830-0730	1.47	2.10	3.57	3.27	6.84
Influent	4/25-4/26	18.5	8.6	27.1		
Final Eff	0830-0730	0.32	1.92	2.24	4.84	7.08
Influent	5/2-5/3	15.5	11.4	26.9		
Final Eff	0830-0730	0.35	1.51	1.86	2.81	4.67
Influent	5/10-5/11	14.6	12.7	27.3		
Final Eff	0830-0730	0.56	1.82	2.38	1.81	4.19
Influent	5/16-5/17	13.7	14.8	28.5		
Final Eff	0830-0730	ND	0.35	0.35	2.85	3.20
Influent	5/23-5/24	13.8	11.9	25.7		
Final Eff	0830-0730	ND	0.42	0.42	3.93	4.34
Influent	5/31-6/1	16.0	9.5	25.5		
Final Eff	0830-0730	ND	1.19	1.19	4.69	5.88
Influent	6/6-6/7	14.6	13.6	28.2		
Final Eff	0830-0730	ND	1.47	1.47	4.06	5.53
Influent	6/13-6/14	17.2	12.2	29.4		
Final Eff	0830-0730	0.84	1.13	1.97	3.02	4.99
Influent	6/20-6/21	16.5	13.6	30.1		
Final Eff	0830-0730	1.28	1.26	2.54	3.87	6.41
Influent	6/27-6/28	13.7	14.5	28.2		
Final Eff	0830-0730	1.36	1.06	2.42	3.79	6.21

Abbreviations: NH3-N (Ammonia-Nitrogen), O-N (Organic Nitrogen), TKN (Total Kjeldahl Nitrogen), NO3-NO2 (Nitrate-Nitrite), TN (Total Nitrogen), ND (None Detected),

Exhibit P-4

LAHAINA WASTEWATER RECLAMATION FACILITY
NITROGEN TESTING
REPORTING PERIOD JULY, AUGUST, SEPTEMBER 2004

I. ANALYSIS

A. Performed by Robert Rychlinski, Sanitary Chemist

B. Standard Methods 4500-Norg Macro-Kjeldahl

C. Standard Methods 4500-NH3 Titrametric Method

D. Standard Methods 4500 NO3-NO2 Automated Cadmium Reduction

II SAMPLE COLLECTIONS

A. Influent samples collected at headworks building.

B. Effluent samples collected at distribution box.

C. Each of the influent and effluent are flow proportioned composite samples.

LAHAINA WASTEWATER RECLAMATION FACILITY
LABORATORY REPORT
REPORTING PERIOD FOR JULY, AUGUST, SEPTEMBER 2004

SAMPLE	DATE/TIME	NH3-N mg/L	O-N mg/L	TKN mg/L	NO3-N02 mg/L	TN mg/L
Influent	7/5-7/6	15.7	14.5	30.2		
Final Eff	0830-0730	1.33	1.18	2.51	NA	
Influent	7/12-7/13	17.0	14.5	31.5		
Final Eff	0830-0730	1.82	0.26	2.08	NA	
Influent	7/18-7/19	18.1	13.2	31.3		
Final Eff	0830-0730	1.05	1.40	2.45	3.44	5.89
Influent	7/25-7/26	16.4	14.6	31		
Final Eff	0830-0730	0.88	1.40	2.28	4.20	6.48
Influent	8/1-8/2	15.8	14.3	30.1		
Final Eff	0830-0730	0.98	1.08	2.06	4.84	6.90
Influent	8/8-8/9	15.5	15.4	30.9		
Final Eff	0830-0730	1.61	1.28	2.89	4.04	6.93
Influent	8/15-8/16	15.6	14.2	29.8		
Final Eff	0830-0730	1.41	1.18	2.59	3.26	5.85
Influent	8/23-8/24	14.4	11.9	26.3		
Final Eff	0830-0730	0.28	1.26	1.54	5.87	7.41
Influent	8/29-8/30	13.0	12	25		
Final Eff	0830-0730	0.14	0.91	1.05	5.09	6.14
Influent	9/5-9/6	11.8	11.4	23.2		
Final Eff	0830-0730	0.23	1.17	1.40	5.39	6.79
Influent	9/12-9/13	11.1	13.8	24.9		
Final Eff	0830-0730	ND	0.84	0.84	5.61	6.45
Influent	9/19-9/20	13.6	10.0	23.6		
Final Eff	0830-0730	ND	1.26	1.26	6.46	7.72
Influent	9/26-9/27	12.1	14.1	26.2		
Final Eff	0830-0730	0.07	1.52	1.59	4.70	6.29

Abbreviations: NH3-N (Ammonia-Nitrogen), O-N (Organic Nitrogen), TKN (Total Kjeldahl Nitrogen), NO3-NO2 (Nitrate-Nitrite), TN (Total Nitrogen), ND (None Detected), NA (Not Available) Auto analyzer was not working properly to perform analyses.

ATTACHMENT Q

ATTACHMENT Q

Lahaina Wastewater Reclamation Facility
UIC Permit Renewal - Permit No. HI596001

Plugging and Abandonment Plan

In the event that a well is not required for future use we have prepared preliminary Plugging and Abandonment Plans. These plans involve filling the open hole and/or perforated pipe with gravel, placing a cement grout at the transition between open hole and solid casing (or perforated casing and the solid casing), filling the solid casing with sand to about a 16' depth then completing the fill with a concrete plug. The casings will be left in place and will be cut off approximately four feet below natural ground surface elevation. Note that as requested in the previous permit application, recent bond ratings for Maui County are also included as Exhibits:

Exhibit Q-1: Plugging and Abandonment Plan Well #1

Exhibit Q-2: Plugging and Abandonment Plan Well #2

Exhibit Q-3: Plugging and Abandonment Plan Well #3

Exhibit Q-4: Plugging and Abandonment Plan Well #4

Exhibit Q-5: Plugging and Abandonment Plan Method / Diagrams

Exhibit Q-6 Standard & Poor's Bond Rating for Maui County

Exhibit Q-7: Moody's Bond Ratings for Maui County

OMB No. 2040-0042 Approval Expires 1/31/05

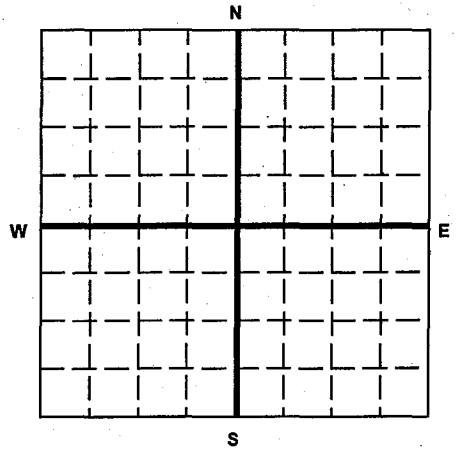
EPA

United States Environmental Protection Agency
Washington, DC 20460

PLUGGING AND ABANDONMENT PLAN

Name and Address of Facility	Name and Address of Owner/Operator
Lahaina Wastewater Reclamation Facility 3300 Honoapiilani Hwy., Lahaina, HI 96791	County of Maui - Department of Public Works and Envir. Mgmt. 200 S. High Street, Wailuku, HI 96793

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Hawaii	Maui	

Surface Location Description

[ ] 1/4 of [ ] 1/4 of [ ] 1/4 of [ ] 1/4 of Section [ ] Township [ ] Range n/a

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location [ ] ft. frm (N/S) [ ] Line of quarter section and [ ] ft. from (E/W) [ ] Line of quarter section.

TYPE OF AUTHORIZATION

- [x] Individual Permit
- [ ] Area Permit
- [ ] Rule

Number of Wells 1

WELL ACTIVITY

- [ ] CLASS I
- [ ] CLASS II
  - [ ] Brine Disposal
  - [ ] Enhanced Recovery
  - [ ] Hydrocarbon Storage
- [ ] CLASS III

Lease Name

Well Number 1

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
20	135	88	81	24
14	85	115	115	18

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- [ ] The Balance Method
- [ ] The Dump Bailer Method
- [x] The Two-Plug Method
- [ ] Other

CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (inche	14 / 20	20					
Depth to Bottom of Tubing or Drill Pipe (ft	200	84					
Sacks of Cement To Be Used (each plug)							
Slurry Volume To Be Pumped (cu. ft.)	54	27					
Calculated Top of Plug (ft.)	73	4.					
Measured Top of Plug (if tagged ft.)							
Slurry Wt. (Lb./Gal.)	16	16					
Type Cement or Other Material (Class III)	4000 psi	4000 psi					

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)

From	To	From	To
205'	90' will be filled with 3/4" gravel		
73'	16' will be filled with sand		

Estimated Cost to Plug Wells

$7,500

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed

Exhibit Q-1

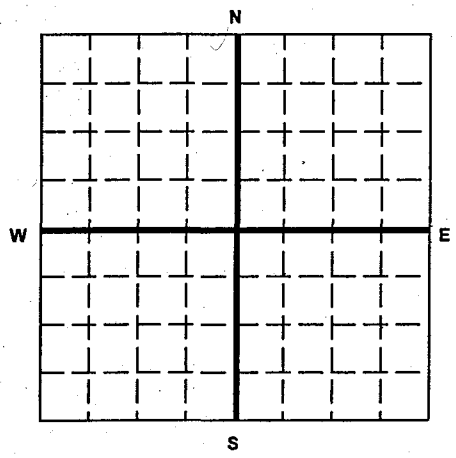
OMB No. 2040-0042 Approval Expires 1/31/05

United States Environmental Protection Agency
Washington, DC 20460

PLUGGING AND ABANDONMENT PLAN

Name and Address of Facility	Name and Address of Owner/Operator
Lahaina Wastewater Reclamation Facility 3300 Honoapiilani Hwy., Lahaina, HI 96791	County of Maui - Department of Public Works and Envir. Mgmt. 200 S. High Street, Wailuku, HI 96793

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Hawaii	Maui	

Surface Location Description

[ ] 1/4 of [ ] 1/4 of [ ] 1/4 of [ ] 1/4 of Section [ ] Township [ ] Range n/a

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location [ ] ft. frm (N/S) [ ] Line of quarter section and [ ] ft. from (E/W) [ ] Line of quarter section.

TYPE OF AUTHORIZATION

- [x] Individual Permit
- [ ] Area Permit
- [ ] Rule

Number of Wells 1

WELL ACTIVITY

- [ ] CLASS I
- [ ] CLASS II
  - [ ] Brine Disposal
  - [ ] Enhanced Recovery
  - [ ] Hydrocarbon Storage
- [ ] CLASS III

Lease Name

Well Number 2

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
20	135	88	81	24

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- [ ] The Balance Method
- [ ] The Dump Bailer Method
- [x] The Two-Plug Method
- [ ] Other

CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (inche	18 / 20	20					
Depth to Bottom of Tubing or Drill Pipe (ft	180	85					
Sacks of Cement To Be Used (each plug)							
Slurry Volume To Be Pumped (cu. ft.)	54	27					
Calculated Top of Plug (ft.)	73	4					
Measured Top of Plug (if tagged ft.)							
Slurry Wt. (Lb./Gal.)	16	16					
Type Cement or Other Material (Class III)	4000 psi	4000 psi					

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)

From	To	From	To
180	100' will be filled with 3/4" gravel		
73	16' will be filled with sand		

Estimated Cost to Plug Wells

$7,600

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed

Exhibit Q-2

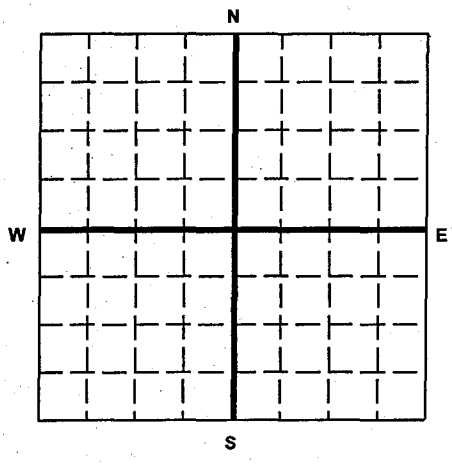
OMB No. 2040-0042 Approval Expires 1/31/05

United States Environmental Protection Agency
Washington, DC 20460

PLUGGING AND ABANDONMENT PLAN

Name and Address of Facility	Name and Address of Owner/Operator
Lahaina Wastewater Reclamation Facility 3300 Honoapiilani Hwy., Lahaina, HI 96791	County of Maui - Department of Public Works and Envir. Mgmt. 200 S. High Street, Wailuku, HI 96793

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Hawaii	Maui	

Surface Location Description

[ ] 1/4 of [ ] 1/4 of [ ] 1/4 of [ ] 1/4 of Section [ ] Township [ ] Range n/a

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location [ ] ft. frm (N/S) [ ] Line of quarter section and [ ] ft. from (E/W) [ ] Line of quarter section.

TYPE OF AUTHORIZATION

- [x] Individual Permit
- [ ] Area Permit
- [ ] Rule

Number of Wells 1

Lease Name

WELL ACTIVITY

- [ ] CLASS I
- [ ] CLASS II
  - [ ] Brine Disposal
  - [ ] Enhanced Recovery
  - [ ] Hydrocarbon Storage
- [ ] CLASS III

Well Number 3

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
20	135	108	101	24

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- [ ] The Balance Method
- [ ] The Dump Bailer Method
- [x] The Two-Plug Method
- [ ] Other

CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (inche	18 / 20	20					
Depth to Bottom of Tubing or Drill Pipe (ft	225	105					
Sacks of Cement To Be Used (each plug)							
Slurry Volume To Be Pumped (cu. ft.)	54	27					
Calculated Top of Plug (ft.)	93	4					
Measured Top of Plug (if tagged ft.)							
Slurry Wt. (Lb./Gal.)	16	16					
Type Cement or Other Material (Class III)	4000 psi	4000 psi					

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)

From	To	From	To
225	120' will be filled with 3/4" gravel		
93	16' will be filled with sand		

Estimated Cost to Plug Wells

$7,850

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed

EPA Form 7520-14 (Rev. 8-01)

Exhibit Q-3

OMB No. 2040-0042 Approval Expires 1/31/05

EPA

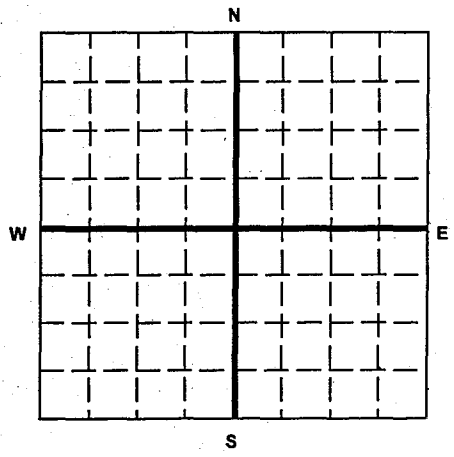
United States Environmental Protection Agency
Washington, DC 20460

PLUGGING AND ABANDONMENT PLAN

Name and Address of Facility
Lahaina Wastewater Reclamation Facility
3300 Honoapiilani Hwy., Lahaina, HI 96791

Name and Address of Owner/Operator
County of Maui - Department of Public Works and Envir. Mgmt.
200 S. High Street, Wailuku, HI 96793

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Hawaii	Maui	

Surface Location Description
[ ] 1/4 of [ ] 1/4 of [ ] 1/4 of [ ] 1/4 of Section [ ] Township [ ] Range n/a

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location [ ] ft. frm (N/S) [ ] Line of quarter section
and [ ] ft. from (E/W) [ ] Line of quarter section.

TYPE OF AUTHORIZATION
- [x] Individual Permit
- [ ] Area Permit
- [ ] Rule

Number of Wells 1

WELL ACTIVITY
- [ ] CLASS I
- [ ] CLASS II
  - [ ] Brine Disposal
  - [ ] Enhanced Recovery
  - [ ] Hydrocarbon Storage
- [ ] CLASS III

Lease Name
Well Number 4

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
20	135	108	101	24
14	85	150	150	18

METHOD OF EMPLACEMENT OF CEMENT PLUGS
- [ ] The Balance Method
- [ ] The Dump Bailer Method
- [x] The Two-Plug Method
- [ ] Other

CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (inche	14 / 20	20					
Depth to Bottom of Tubing or Drill Pipe (ft	255	105					
Sacks of Cement To Be Used (each plug)							
Slurry Volume To Be Pumped (cu. ft.)	54	27					
Calculated Top of Plug (ft.)	93	4					
Measured Top of Plug (if tagged ft.)							
Slurry Wt. (Lb./Gal.)	16	16					
Type Cement or Other Material (Class III)	4000 psi	4000 psi					

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)

From	To	From	To
255	130' will be filled with 3/4" gravel		
93	16' will be filled with sand		

Estimated Cost to Plug Wells
$7,700

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed

Exhibit Q-4

Preliminary

Lahaina Injection Well Abandonment Plan

Method of Abondoning Well

1 Measure Depth of Well
2 All casing shall remain with the exception of the stick up and to a depth of 4 feet below finish ground level.
3 Remove air surge line
4 Inflow pipe shall be exposed, cut and plugged
5 Fill all open hole with 3/4"gravel
Place two cubic yards of concrete at transition from open hole to solid casing
or
Fill preforated casing with 3/4"gravel
Place two cubic yards of concrete at transition from perforated casing to solid casing.
6 Fill soid casing with sand to a point about 16 feet below finish ground (approximately 4 feet below inflow pipe)
7 Remove Casing stickup and additional 4 feet below ground surface
8 Seal remaining casing with concrete (Approximately 1 C.Y.)

Note:
Monitor and record depth and volume of material placement
Verify that no sluffing of material occurs (48 hours) before placing one layer of material over another.
File required reports with EPA, State DOH and DNLR

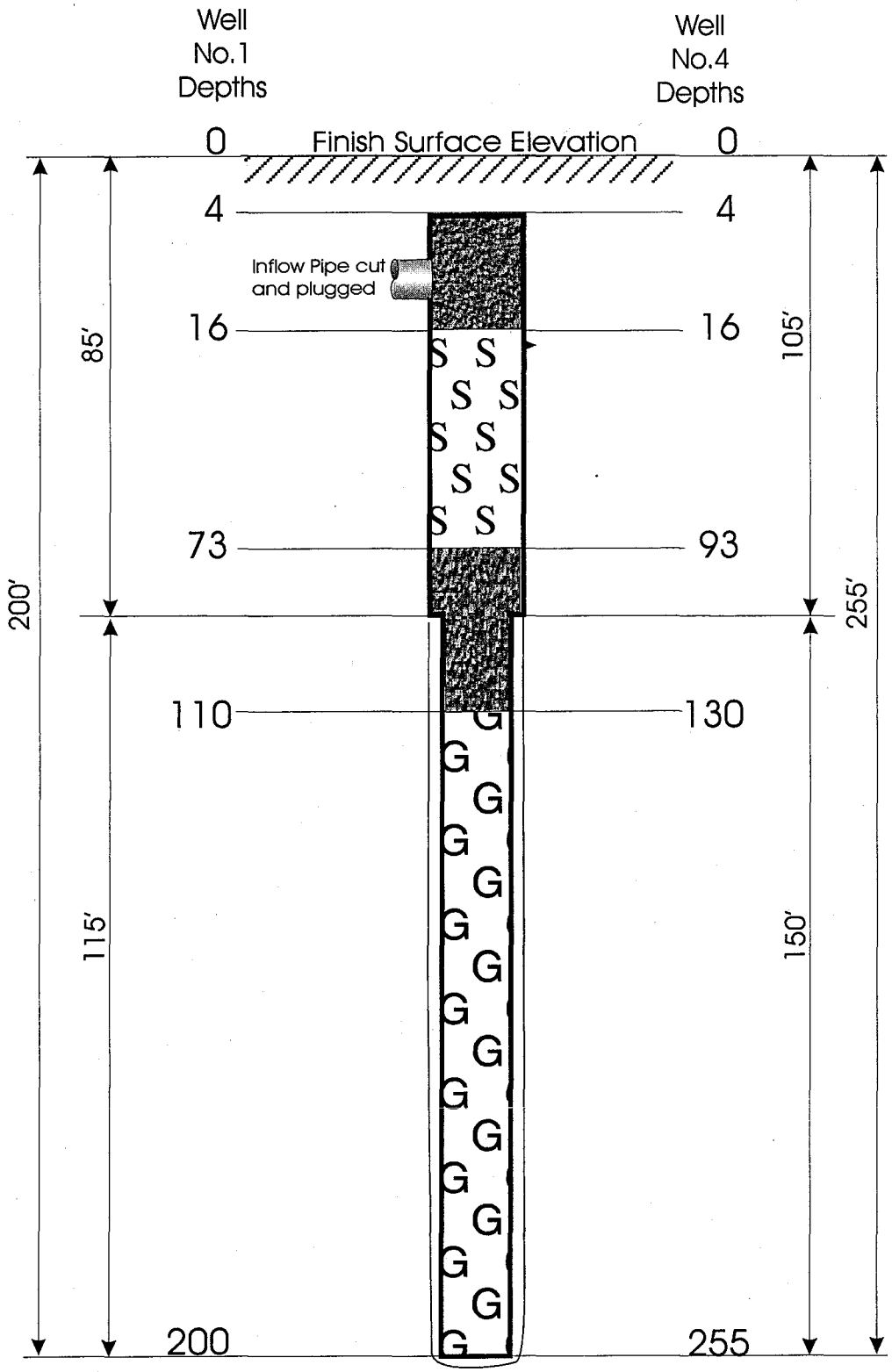
Cost Estimate

Item	Unit Cost	Well 1	Well 2	Well 3	Well 4
Mobilization	$2,500	$2,500	$2,500	$2,500	$2,500
3/4" gravel (C.Y.)	$75	$266	$391	$514	$370
Concrete (C.Y.)	$150	$450	$450	$450	$450
Sand (C.Y.)	$60	$268	$273	$370	$370
Monitoring etc.	$2,000	$2,000	$2,000	$2,000	$2,000
Well Head Removal etc.	$1,500	$1,500	$1,500	$1,500	$1,500
Backfill/grading	$500	$500	$500	$500	$500
Total		**$7,484**	**$7,614**	**$7,834**	**$7,690**

Lahaina Injection Well Abandonment Plan

Well Characteristics	Well 1	Well 2	Well 3	Well 4
Casing Stickup (ft.)	4	3	3	3
Open Hole diameter (in.)	0	18	18	0
Open Hole height (ft.)	0	95	120	0
Perforated Casing diameter (in.)	14	0	0	14
Perforated Casing height (ft.)	115	0	0	150
Solid Casing diameter (in.)	20	20	20	20
Solid Casing height (ft.)	88	88	108	108
Well Depth	200	180	225	255
Plug Locations				
Depth to top of Plug 2	4	4	4	4
Depth to inflow pipe	11	11.5	12	12
Depth to bottom of plug 2	16	16	16	16
Depth to top of Plug 1	73	73	93	93
Depth to bottom of solid casing	85	85	105	105
Depth to bottom of Plug 1	110	100	120	130
Bottom depth	200	180	225	255
Fill Volume for one lineal foot				
Volume of Solid Casing (ft^3)	2.18	2.18	2.18	2.18
Volume of Perforated Casing (ft^3)	1.07	0.00	0.00	1.07
Volume of Open Hole (ft^3)	0.00	1.77	1.77	0.00
CEMENT PLUGS				
Solid Casing Plug length (2 C.Y.)	24.75	24.75	24.75	24.75
Perforated Casing Plug length (1 C.Y.)	25.26	0.00	0.00	25.26
Open Hole Plug Length (1 C.Y.)	0.00	15.28	15.28	0.00
OTHER MATERIALS				
Solid Casing Sand Length (ft.)	55.25	56.25	76.25	76.25
Perforated Casing Gravel length (ft.)	89.74	0.00	0.00	124.74
Open Hole Gravel Length (ft.)	0.00	79.72	104.72	0.00
Total Length Filled	195.00	176.00	221.00	251.00
Stick up and casing removal	8.00	7.00	7.00	7.00
Total Well Depth	203.00	183.00	228.00	258.00
1 C.Y. of material will fill:				
Solid Casing length (ft.)	12.38	12.38	12.38	12.38
Perforated Casing length (ft.)	25.26	0.00	0.00	25.26
Open Hole length (ft.)	0.00	15.28	15.28	0.00
Fill Material Required				
Volume of Concrete Required (C.Y.)	3.00	3.00	3.00	3.00
Volume of Sand Required (C.Y.)	4.46	4.54	6.16	6.16
Volume of Gravel Required (C.Y.)	3.55	5.22	6.85	4.94

Lahaina Wastewater Reclamation Facility
Well Abandonment Plan
Injection Well No.'s 1 and 4



Solid Casing stick up and 4' below finish surface removed

Concrete Plug (1 C.Y.)

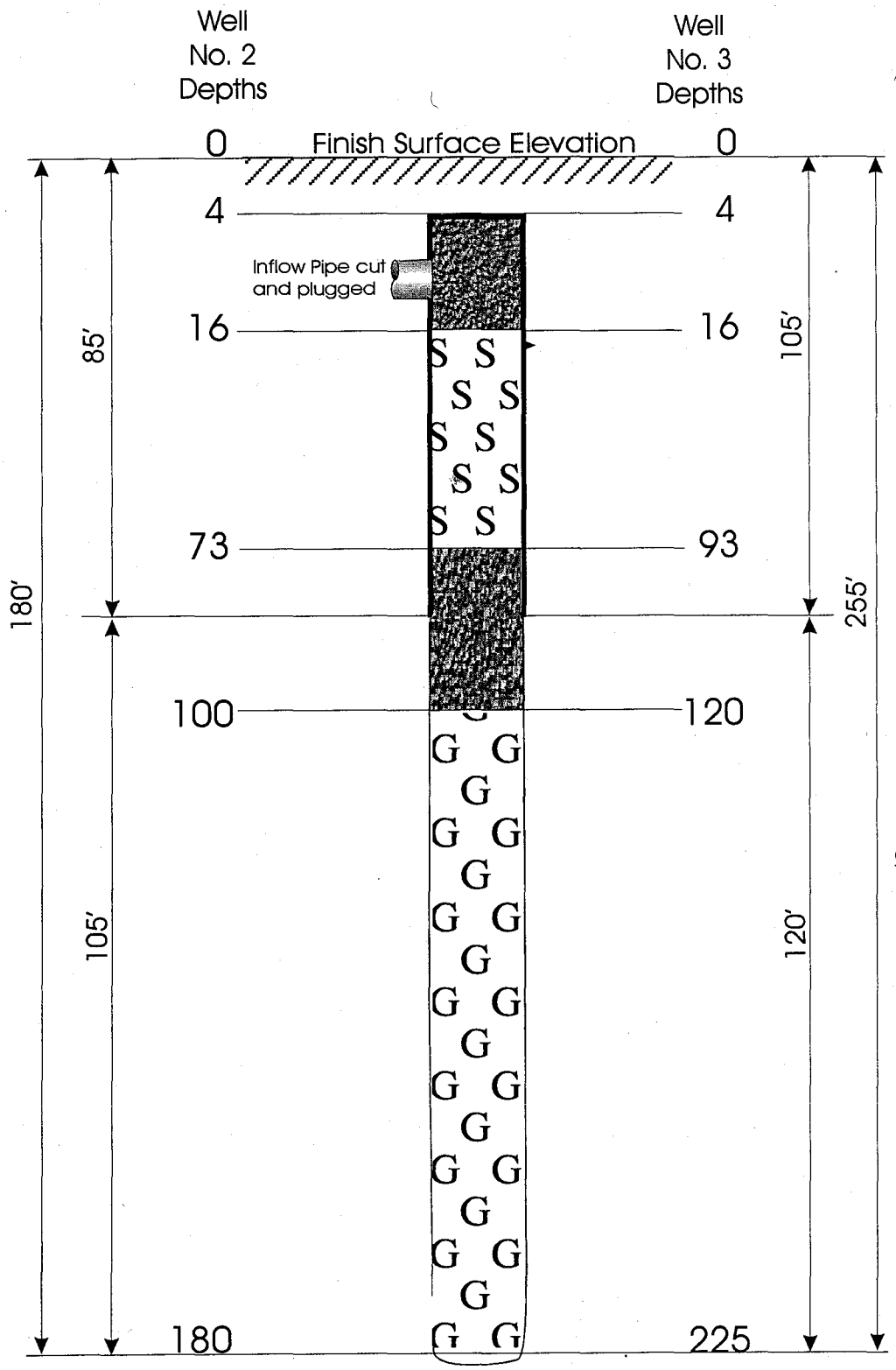
Solid Casing Remaining
Fill : Sand
Length: Well 1 - 81 L.F.
Well 4 - 101L.F.
Diameter: 20" I.D.
Material: Steel

Concrete Plug (2 C.Y.)

Perforated Casing Remaining
Fill : 3/4" Gravel
Length: Well 1 - 115 L.F.
Well 4 - 150 L.F.
Diameter: 14" I.D.
Wall Thickness: 1/4"
Material: Copper Bearing Fluflo Louver
Openings: 1/4" Slot
120 openings/foot
79 in^2 open/foot

Exhibit Q-5

Lahaina Wastewater Reclamation Facility
Well Abandonment Plan
Injection Well No.'s 2 and 3



Solid Casing stick up and 4' below finish surface removed

Concrete Plug
(1 C.Y.)

Solid Casing Remaining
Fill : Sand
Length: Well 2 - 81 L.F.
Well 3 - 101 L.F.
Diameter: 20" I.D.
Material: Steel

Concrete Plug
(2 C.Y.)

Open Hole
Fill : 3/4" Gravel
Length: Well 2 - 95 L.F.
Well 3 - 120 L.F.
Diameter: 18" I.D.

ATTACHMENT R

ATTACHMENT R

Lahaina Wastewater Reclamation Facility
UIC Permit Renewal - Permit No. HI596001

Necessary Resources

As requested in the previous permit application, recent bond ratings for Maui County are also included as Exhibits:

The following exhibits are attached for your review:

Exhibit R-1 Standard & Poor's Bond Rating for Maui County

Exhibit R-2: Moody's Bond Ratings for Maui County

Credit Ratings
Find a Rating
Credit Ratings Actions
Credit Ratings Search
Criteria & Definitions
News & Analysis

Browse By Sector (GICS®)
Energy
Materials
Industrials
Consumer Discretionary
Consumer Staples
Health Care
Financials
Information Technology
Telecommunications Services
Utilities

Browse By Business Line
Bond Insurance
International Public Finance
Sovereigns
Public Finance (US)
Structured Finance

Credit Ratings Search

New Search

Maui Cnty, HI
HI USA

Issue Ratings

Filter By: > Instrument Name: RESET FILTER
> Class:
> Maturity Date: Exact Date (MM/DD/YYYY) FILTER

<121>-<140> of <235> <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> >>

Instrument	Class	Maturity Date	Rating	Rating Date	CreditWatch
US$17.750 mil GO bnds ser 1997 A dtd 06/15/1997 due 09/01/1998-2017	1997 A	Sep 01, 2015	AAA/Stable	Jul 08, 1997	
	1997 A	Sep 01, 2016	AAA/Stable	Jul 08, 1997	
	1997 A	Sep 01, 2017	AAA/Stable	Jul 08, 1997	
US$21.555 mil GO bnds ser 2004A&B dtd 03/17/2004 due 09/01/2004-2017	2004A	Sep 01, 2007	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004	
	2004A	Sep 01, 2008	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004	
	2004A	Sep 01, 2009	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004	
	2004A	Sep 01, 2010	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004	
	2004A	Sep 01, 2010	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004	
	2004A	Sep 01, 2011	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004	
	2004A	Sep 01, 2011	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004	
	2004B	Sep 01, 2005	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004	
	2004B	Sep 01, 2006	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004	
	2004B	Sep 01, 2007	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004	
	2004B	Sep 01, 2008	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004	
	2004B	Sep 01, 2008	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004	
	2004B	Sep 01, 2009	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004	
	2004B	Sep 01, 2009	AAA/Stable, AA-/	Mar 16, 2004	

		Negative(SPUR)	
2004B	Sep 01, 2010	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004
2004B	Sep 01, 2010	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004
2004B	Sep 01, 2011	AAA/Stable, AA-/ Negative(SPUR)	Mar 16, 2004

<121>-<140> of <235> <1> <2> <3> <4> <5> <6> <7> <8> <9> <10> >>

SEARCH RESULTS > MUNICIPAL FINANCE > ISSUER SUMMARY

Maui (County of) HI

Research Links

12 records

	Report Type	Date	Title
- -	New Issue	24 MAR 2003	MOODY'S ASSIGNS Aa3 RATING TO MAUI COUNTY (HI) GENERAL OBLIGATION BONDS, 2003 SERIES A, B, C AND D; STABLE OUTLOOK
- -	New Issue	7 MAY 2002	MOODY'S ASSIGNS Aa3 RATING TO MAUI COUNTY, HAWAII'S GENERAL OBLIGATION BONDS
- -	New Issue	26 JUN 2001	MOODY'S ASSIGNS Aa3 RATING TO MAUI COUNTY'S GENERAL OBLIGATION REFUNDING BONDS
- -	New Issue	11 MAY 2001	MOODY'S UPGRADES MAUI COUNTY'S GENERAL OBLIGATION BONDS FROM A1 TO Aa3
- -	New Issue	4 MAY 2000	Maui (County of) HI
- -	New Issue	4 MAY 1999	Maui (County of) HI
- -	New Issue	30 MAR 1998	Maui (County of) HI
- -	New Issue	23 JUN 1997	Maui (County of) HI
- -	New Issue	3 JUN 1996	General Obligation Bonds, Series '96A
- -	New Issue	8 JUN 1995	Maui County
- -	New Issue	27 JAN 1993	General Obligation Bonds, '93A
- -	New Issue	2 SEP 1992	General Obligation Refunding Bonds '92 A

Issuer Details

Sector: County , Water/Sewer
State: Hawaii (State of)
City/Town:
County:

Outlook: No Outlook, 15 NOV 2003
Watchlist Status: No
Direction:
Date:
Ticker(s):
CUSIP(s): 577285, 577302, 577319, 577336

Current Rating List

18 records

General Obligation Bonds, 2004 Series A & B

Sale Date: 2 MAR 2004 **Sale Amt:** 23.21

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	12 MAR 2004	No	
Underlying	Aa3	Assign	16 MAR 2004	No	

General Obligation Bonds, 2003 Series A, B, C and D

Sale Date: 25 MAR 2003 **Sale Amt:** 41.13

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	3 JUN 2003	No	
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

General Obligation Bonds, 2002 Series B & C

Sale Date: 22 AUG 2002 **Sale Amt:** 26.27

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	5 SEP 2002	No	
Underlying	Aa3	Assign	16 MAR 2004	No	

General Obligation Bonds, 2002 Series A

Sale Date: 9 MAY 2002 **Sale Amt:** 25.00

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	17 MAY 2002	No	
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

General Obligation Bonds, 2001 Series B and C

Sale Date: 2 JUL 2001 **Sale Amt:** 29.88

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	23 OCT 2001	No	
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

General Obligation Bonds, 2001 Series A

Sale Date: 16 MAY 2001 **Sale Amt:** 23.49

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

General Obligation Bonds, 2000 Series A

Sale Date: 19 MAY 2000 **Sale Amt:** 14.44

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	22 MAY 2000	No	
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

General Obligation Bonds, Series 1999A

Sale Date: 5 MAY 1999 **Sale Amt:** 11.60

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	17 MAY 1999	No	
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

General Obligation, 1998 Series C

Sale Date: 21 JUL 1998 **Sale Amt:** 11.76

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	11 AUG 1998	No	
Underlying	Aa3	Assign	16 MAR 2004	No	

General Obligation

Sale Date: 21 APR 1998 **Sale Amt:** 43.54

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	4 MAY 1998	No	
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

General Obligation

Sale Date: 25 JUN 1997 **Sale Amt:** 17.75

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	8 JUL 1997	No	
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

General Obligation

Sale Date: 12 JUN 1996 **Sale Amt:** 14.50

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	25 JUN 1996	No	
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

General Obligation

Sale Date: 9 JUN 1995 **Sale Amt:** 17.29

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	28 JUN 1995	No	
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

General Obligation Refunding Bonds, Series '93F & G, Dated 12-15-93

Sale Date: 15 DEC 1993 **Sale Amt:** 55.48

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	12 JAN 1994	No	
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

General Obligation

Sale Date: 21 APR 1993 **Sale Amt:** 104.28

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	7 MAY 1993	No	
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

General Obligation

Sale Date: 27 JAN 1993 **Sale Amt:** 22.80

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	10 FEB 1993	No	
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

Water Revenue

Sale Date: 10 DEC 1991 **Sale Amt:** 35.78

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	27 DEC 1991	No	

General Obligation

Sale Date: 4 DEC 1990 **Sale Amt:** 38.89

	Rating	Rating Action	Rating Date	Watch	Watch Direction/Date
Insured	Aaa	Assign	19 DEC 1990	No	
Underlying	Aa3	RATING AFFIRMATION	16 MAR 2004	No	

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24 NOV 2004, 20:55 Eastern Time

ATTACHMENT U

ATTACHMENT U

Lahaina Wastewater Reclamation Facility
UIC Permit Renewal - Permit No. HI596001

Description of Business

The Department of Public Works and Environmental Management is the branch of the Maui County government charged with providing and regulating the public sewer facilities, roads, drainage facilities, and solid waste operations on the four islands (Maui, Molokai, Lanai and Kahoolawe) which make up the County.. Of particular concern to this permit application, Maui County operates 5 wastewater reclamation facilities (WWRF's) which sever approximately 130,000 (people) residential and visitors on a daily basis.

The Lahaina WWRF treats approximately 5.5 million gallons a day of domestic wastewater influent that is generated by an estimated daily residential population of approximately 40,000 people in residential subdivisions and resort accommodations along with typical supportive light commercial businesses. The wastewater is treated to R-1 standards and approximately 4.5 mgd is sent to the four injection wells included in this permit and about 1 million gallons is delivered to reuse customers for irrigation uses.