

US EPA ARCHIVE DOCUMENT

APPENDIX A

Monitoring Well Construction Summary and Boring Logs

PROSONIC® CORPORATION

MONITORING WELL LOG

CLIENT NAME Kennecot - North Jackson DRILL TEAM DAV.O., Mickey H., Eric B.
 PROJECT NAME Eagle DRILLING METHOD Sonic
 LOCATION B.g Bay. MI DATE 7-27-05 PROJECT NUMBER 2855933
 BORING NUMBER QAL-0241 DEVELOPMENT METHOD _____

WELL MATERIALS USED <table border="0" style="width: 100%;"> <tr><td>FEET OF 5 FOOT RISER</td><td><u>1</u></td></tr> <tr><td>FEET OF 10 FOOT RISER</td><td><u>4</u></td></tr> <tr><td>FEET OF SCREEN</td><td><u>10</u></td></tr> <tr><td>PUSH ON CAPS</td><td><u>—</u></td></tr> <tr><td>BOTTOM PLUGS</td><td><u>1</u></td></tr> <tr><td>LOCKING PLUGS</td><td><u>1</u></td></tr> <tr><td>LOCKS</td><td><u>—</u></td></tr> <tr><td>BAGS OF SAND</td><td><u>6</u></td></tr> <tr><td>BAGS OF HOLE PLUG</td><td><u>1/2</u></td></tr> <tr><td>BUCKETS OF PELLETS</td><td><u>—</u></td></tr> <tr><td>BAGS OF BENTONITE GEL</td><td><u>—</u></td></tr> <tr><td>BAGS OF CEMENT</td><td><u>—</u></td></tr> <tr><td>BAGS OF CONCRETE MIX</td><td><u>—</u></td></tr> <tr><td>STAND UP COVERS</td><td><u>1</u></td></tr> <tr><td>MANHOLE COVERS</td><td><u>—</u></td></tr> <tr><td>55 GALLON DRUMS</td><td><u>—</u></td></tr> <tr><td>FEET OF SURFACE CASING</td><td><u>3</u></td></tr> <tr><td>ROLLS OF PLASTIC</td><td><u>—</u></td></tr> <tr><td>TYVEK SUITS</td><td><u>—</u></td></tr> <tr><td>OUTER GLOVES</td><td><u>—</u></td></tr> <tr><td>INNER GLOVES</td><td><u>—</u></td></tr> <tr><td>GUARD POSTS</td><td><u>—</u></td></tr> <tr><td>JTHER</td><td><u>—</u></td></tr> <tr><td>OTHER</td><td><u>—</u></td></tr> </table>	FEET OF 5 FOOT RISER	<u>1</u>	FEET OF 10 FOOT RISER	<u>4</u>	FEET OF SCREEN	<u>10</u>	PUSH ON CAPS	<u>—</u>	BOTTOM PLUGS	<u>1</u>	LOCKING PLUGS	<u>1</u>	LOCKS	<u>—</u>	BAGS OF SAND	<u>6</u>	BAGS OF HOLE PLUG	<u>1/2</u>	BUCKETS OF PELLETS	<u>—</u>	BAGS OF BENTONITE GEL	<u>—</u>	BAGS OF CEMENT	<u>—</u>	BAGS OF CONCRETE MIX	<u>—</u>	STAND UP COVERS	<u>1</u>	MANHOLE COVERS	<u>—</u>	55 GALLON DRUMS	<u>—</u>	FEET OF SURFACE CASING	<u>3</u>	ROLLS OF PLASTIC	<u>—</u>	TYVEK SUITS	<u>—</u>	OUTER GLOVES	<u>—</u>	INNER GLOVES	<u>—</u>	GUARD POSTS	<u>—</u>	JTHER	<u>—</u>	OTHER	<u>—</u>		TYPE OF PROTECTIVE COVER <u>4" Round Pro Cover</u> STICK-UP OF RISER PIPE <u>3'</u> TYPE OF SURFACE SEAL <u>Concrete</u> RISER PIPE I.D. (INCHES) <u>2.0"</u> TYPE OF RISER PIPE <u>Sch. 40 PVC</u> BOREHOLE DIAMETER (INCHES) <u>6"</u> TYPE OF BACKFILL <u>Bent. Chip 3/8</u> DEPTH TO TOP OF SEAL (FEET) <u>29'</u> TYPE OF SEAL <u>Bent. Chip 3/8</u> DEPTH TO TOP OF SAND PACK (FEET) <u>32'</u> SIZE OF SAND PACK <u>K&E #1</u> DEPTH TO TOP OF SCREEN (FEET) <u>35'</u> SCREEN I.D. (INCHES) <u>2.0"</u> TYPES OF SCREEN <u>Sch. 40 PVC</u> LENGTH OF SCREEN (FEET) <u>10'</u> SLOT SIZE OF SCREEN (INCHES) <u>.080</u> DEPTH TO BOTTOM OF SCREEN (FEET) <u>45'</u> SAND TO 47' TYPE OF BACKFILL BELOW SCREEN <u>Bent. Chip 3/8</u> DEPTH TO BOTTOM OF HOLE (FEET) <u>64'</u>
FEET OF 5 FOOT RISER	<u>1</u>																																																	
FEET OF 10 FOOT RISER	<u>4</u>																																																	
FEET OF SCREEN	<u>10</u>																																																	
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PROSONIC® CORPORATION MONITORING WELL LOG

CLIENT NAME Kennecott & North Jackson DRILL TEAM DAN O, Meloy H, Eric G
PROJECT NAME Eagle DRILLING METHOD Sonic
LOCATION Big Bay MZ DATE 7-27-05 PROJECT NUMBER 258483
BORING NUMBER CPL025 DEVELOPMENT METHOD _____

		TYPE OF PROTECTIVE COVER	<u>4" Round</u>
		STICK-UP OF RISER PIPE	<u>3'</u>
		TYPE OF SURFACE SEAL	<u>Concrete</u>
		RISER PIPE I.D. (INCHES)	<u>2.0"</u>
		TYPE OF RISER PIPE	<u>PVC Sch. 40</u>
		BOREHOLE DIAMETER (INCHES)	<u>6.0"</u>
		TYPE OF BACKFILL	<u>Bent. chip 3/8</u>
		DEPTH TO TOP OF SEAL (FEET)	<u>30</u>
		TYPE OF SEAL	<u>Bent. chip 3/8</u>
		DEPTH TO TOP OF SAND PACK (FEET)	<u>33</u>
		SIZE OF SAND PACK	<u>1/2 #1</u>
		DEPTH TO TOP OF SCREEN (FEET)	<u>35</u>
		SCREEN I.D. (INCHES)	<u>2.0"</u>
		TYPES OF SCREEN	<u>Sch. 40 PVC</u>
		LENGTH OF SCREEN (FEET)	<u>10'</u>
		SLOT SIZE OF SCREEN (INCHES)	<u>0.010</u>
		DEPTH TO BOTTOM OF SCREEN (FEET)	<u>45</u>
		<u>SAND TO 47'</u>	
		TYPE OF BACKFILL BELOW SCREEN	<u>3/8 Bent. chip</u>
		DEPTH TO BOTTOM OF HOLE (FEET)	<u>118</u>

*Not to Scale

WELL MATERIALS USED

FEET OF 5 FOOT RISER	<u>1</u>
FEET OF 10 FOOT RISER	<u>4</u>
FEET OF SCREEN	<u>10</u>
PUSH ON CAPS	<u>1</u>
BOTTOM PLUGS	<u>1</u>
LOCKING PLUGS	<u>1</u>
LOCKS	<u>1</u>
BAGS OF SAND	<u>6</u>
BAGS OF HOLE PLUG	<u>25</u>
BUCKETS OF PELLETS	<u>1</u>
BAGS OF BENTONITE GEL	<u>1</u>
BAGS OF CEMENT	<u>1</u>
BAGS OF CONCRETE MIX	<u>1</u>
STAND UP COVERS	<u>1</u>
MANHOLE COVERS	<u>1</u>
55 GALLON DRUMS	<u>1</u>
FEET OF SURFACE CASING	<u>3</u>
ROLLS OF PLASTIC	<u>1</u>
TYVEK SUITS	<u>1</u>
OUTER GLOVES	<u>1</u>
INNER GLOVES	<u>1</u>
GUARD POSTS	<u>1</u>
OTHER	<u>1</u>

PROSONIC® CORPORATION MONITORING WELL LOG

CLIENT NAME Kennecot - North Jackson DRILL TEAM DAN O, milkey H. Eric G.
PROJECT NAME Eagle DRILLING METHOD Sonic
LOCATION Big Bay, ME DATE 7-28-05 PROJECT NUMBER 2356933
BORING NUMBER QA1026 DEVELOPMENT METHOD _____

		TYPE OF PROTECTIVE COVER	<u>4" Sand</u>
		STICK-UP OF RISER PIPE	<u>3'</u>
		TYPE OF SURFACE SEAL	<u>Concrete</u>
		RISER PIPE I.D. (INCHES)	<u>2.0"</u>
		TYPE OF RISER PIPE	<u>Sch. 40 PVC</u>
		BOREHOLE DIAMETER (INCHES)	<u>6"</u>
		TYPE OF BACKFILL	<u>Bentonite chip 3/8</u>
		DEPTH TO TOP OF SEAL (FEET)	<u>30</u>
		TYPE OF SEAL	<u>Bentonite chip 3/8</u>
		DEPTH TO TOP OF SAND PACK (FEET)	<u>32</u>
		SIZE OF SAND PACK	<u>K&E #1</u>
		DEPTH TO TOP OF SCREEN (FEET)	<u>35'</u>
		SCREEN I.D. (INCHES)	<u>2.0"</u>
		TYPES OF SCREEN	<u>Sch. 40 PVC</u>
		LENGTH OF SCREEN (FEET)	<u>10'</u>
		SLOT SIZE OF SCREEN (INCHES)	<u>0.010</u>
		DEPTH TO BOTTOM OF SCREEN (FEET)	<u>45'</u>
		<u>SAND TO 47'</u>	
		TYPE OF BACKFILL BELOW SCREEN	<u>Bent. chip 3/8</u>
		DEPTH TO BOTTOM OF HOLE (FEET)	<u>118'</u>

*Not to Scale

WELL MATERIALS USED

FEET OF 5 FOOT RISER 1
FEET OF 10 FOOT RISER 3
FEET OF SCREEN 10
PUSH ON CAPS 1
BOTTOM PLUGS 1
LOCKING PLUGS 1
LOCKS 1
BAGS OF SAND 8
BAGS OF HOLE PLUG 16
BUCKETS OF PELLETS 1
BAGS OF BENTONITE GEL 1
BAGS OF CEMENT 1
BAGS OF CONCRETE MIX 1
STAND UP COVERS 1
MANHOLE COVERS 1
55 GALLON DRUMS 1
FEET OF SURFACE CASING 3
ROLLS OF PLASTIC 1
TYVEK SUITS 1
OUTER GLOVES 1
INNER GLOVES 1
GUARD POSTS 1
OTHER 1
OTHER 1

PROSONIC® CORPORATION MONITORING WELL LOG

CLIENT NAME North Jackson DRILL TEAM Chris B; Mike A.
PROJECT NAME Eagle DRILLING METHOD H.S.A.
LOCATION Big Bay, mt DATE 7-28-05 PROJECT NUMBER 235590
BORING NUMBER QAL-027 DEVELOPMENT METHOD _____

WELL MATERIALS USED <table border="0" style="width: 100%;"> <tr><td>FEET OF 5 FOOT RISER</td><td><u>1</u></td></tr> <tr><td>FEET OF 10 FOOT RISER</td><td><u>4</u></td></tr> <tr><td>FEET OF SCREEN</td><td><u>10</u></td></tr> <tr><td>PUSH ON CAPS</td><td><u>—</u></td></tr> <tr><td>BOTTOM PLUGS</td><td><u>1</u></td></tr> <tr><td>LOCKING PLUGS</td><td><u>1</u></td></tr> <tr><td>LOCKS</td><td><u>1</u></td></tr> <tr><td>BAGS OF SAND</td><td><u>8</u></td></tr> <tr><td>BAGS OF HOLE PLUG</td><td><u>8</u></td></tr> <tr><td>BUCKETS OF PELLETS</td><td><u>1</u></td></tr> <tr><td>BAGS OF BENTONITE GEL</td><td><u>1</u></td></tr> <tr><td>BAGS OF CEMENT</td><td><u>1</u></td></tr> <tr><td>BAGS OF CONCRETE MIX</td><td><u>3</u></td></tr> <tr><td>STAND UP COVERS</td><td><u>1</u></td></tr> <tr><td>MANHOLE COVERS</td><td><u>1</u></td></tr> <tr><td>55 GALLON DRUMS</td><td><u>1</u></td></tr> <tr><td>FEET OF SURFACE CASING</td><td><u>3</u></td></tr> <tr><td>ROLLS OF PLASTIC</td><td><u>1</u></td></tr> <tr><td>TYVEK SUITS</td><td><u>—</u></td></tr> <tr><td>OUTER GLOVES</td><td><u>—</u></td></tr> <tr><td>INNER GLOVES</td><td><u>—</u></td></tr> <tr><td>GUARD POSTS</td><td><u>—</u></td></tr> <tr><td>OTHER</td><td><u>—</u></td></tr> <tr><td>OTHER</td><td><u>—</u></td></tr> </table>	FEET OF 5 FOOT RISER	<u>1</u>	FEET OF 10 FOOT RISER	<u>4</u>	FEET OF SCREEN	<u>10</u>	PUSH ON CAPS	<u>—</u>	BOTTOM PLUGS	<u>1</u>	LOCKING PLUGS	<u>1</u>	LOCKS	<u>1</u>	BAGS OF SAND	<u>8</u>	BAGS OF HOLE PLUG	<u>8</u>	BUCKETS OF PELLETS	<u>1</u>	BAGS OF BENTONITE GEL	<u>1</u>	BAGS OF CEMENT	<u>1</u>	BAGS OF CONCRETE MIX	<u>3</u>	STAND UP COVERS	<u>1</u>	MANHOLE COVERS	<u>1</u>	55 GALLON DRUMS	<u>1</u>	FEET OF SURFACE CASING	<u>3</u>	ROLLS OF PLASTIC	<u>1</u>	TYVEK SUITS	<u>—</u>	OUTER GLOVES	<u>—</u>	INNER GLOVES	<u>—</u>	GUARD POSTS	<u>—</u>	OTHER	<u>—</u>	OTHER	<u>—</u>		TYPE OF PROTECTIVE COVER <u>4" Rimmel</u> STICK-UP OF RISER PIPE <u>3'</u> TYPE OF SURFACE SEAL <u>Concrete</u> RISER PIPE I.D. (INCHES) <u>2.0"</u> TYPE OF RISER PIPE <u>Sch 40</u> BOREHOLE DIAMETER (INCHES) <u>5.25"</u> TYPE OF BACKFILL <u>Bent. chip 3/8</u> DEPTH TO TOP OF SEAL (FEET) <u>34'</u> TYPE OF SEAL <u>Bentonite Chip</u> DEPTH TO TOP OF SAND PACK (FEET) <u>37'</u> SIZE OF SAND PACK <u>K&E #1</u> DEPTH TO TOP OF SCREEN (FEET) <u>38'</u> SCREEN I.D. (INCHES) <u>2.0"</u> TYPES OF SCREEN <u>Sch 40 PVC</u> LENGTH OF SCREEN (FEET) <u>10'</u> SLOT SIZE OF SCREEN (INCHES) <u>#10</u> DEPTH TO BOTTOM OF SCREEN (FEET) <u>48'</u> TYPE OF BACKFILL BELOW SCREEN <u>SAND</u> DEPTH TO BOTTOM OF HOLE (FEET) <u>50'</u>
FEET OF 5 FOOT RISER	<u>1</u>																																																	
FEET OF 10 FOOT RISER	<u>4</u>																																																	
FEET OF SCREEN	<u>10</u>																																																	
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BAGS OF CONCRETE MIX	<u>3</u>																																																	
STAND UP COVERS	<u>1</u>																																																	
MANHOLE COVERS	<u>1</u>																																																	
55 GALLON DRUMS	<u>1</u>																																																	
FEET OF SURFACE CASING	<u>3</u>																																																	
ROLLS OF PLASTIC	<u>1</u>																																																	
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GUARD POSTS	<u>—</u>																																																	
OTHER	<u>—</u>																																																	
OTHER	<u>—</u>																																																	

PROSONIC® CORPORATION MONITORING WELL LOG

CLIENT NAME North Jackson DRILL TEAM Chris B, Mikel
PROJECT NAME Eagle DRILLING METHOD M.S.A.
LOCATION Big Bay, MS DATE 7/28/05 PROJECT NUMBER 2355933
BORING NUMBER QAL-028 DEVELOPMENT METHOD _____

WELL MATERIALS USED FEET OF 5 FOOT RISER _____ FEET OF 10 FOOT RISER <u>6</u> FEET OF SCREEN <u>10</u> PUSH ON CAPS _____ OTTOM PLUGS <u>1</u> LOCKING PLUGS <u>1</u> LOCKS _____ BAGS OF SAND <u>8</u> BAGS OF HOLE PLUG <u>12</u> BUCKETS OF PELLETS _____ BAGS OF BENTONITE GEL _____ BAGS OF CEMENT _____ BAGS OF CONCRETE MIX <u>3</u> STAND UP COVERS <u>1</u> MANHOLE COVERS _____ 55 GALLON DRUMS _____ FEET OF SURFACE CASING <u>3</u> ROLLS OF PLASTIC _____ TYVEK SUITS _____ OUTER GLOVES _____ INNER GLOVES _____ GUARD POSTS _____ HER _____ OTHER _____		TYPE OF PROTECTIVE COVER <u>4'0" Rand</u> STICK-UP OF RISER PIPE <u>2'</u> TYPE OF SURFACE SEAL <u>Concrete</u> RISER PIPE I.D. (INCHES) <u>2.0"</u> TYPE OF RISER PIPE <u>Sch 40</u> BOREHOLE DIAMETER (INCHES) <u>2.25"</u> TYPE OF BACKFILL <u>Bent. chip 3/8</u> DEPTH TO TOP OF SEAL (FEET) <u>49'</u> TYPE OF SEAL <u>Bentonite Chip</u> DEPTH TO TOP OF SAND PACK (FEET) <u>52'</u> SIZE OF SAND PACK <u>K&E #1</u> DEPTH TO TOP OF SCREEN (FEET) <u>53'</u> SCREEN I.D. (INCHES) <u>2.0"</u> TYPES OF SCREEN <u>Sch 40 PVC</u> LENGTH OF SCREEN (FEET) <u>10'</u> SLOT SIZE OF SCREEN (INCHES) <u>1/10</u> DEPTH TO BOTTOM OF SCREEN (FEET) <u>63'</u> TYPE OF BACKFILL BELOW SCREEN <u>SAND</u> DEPTH TO BOTTOM OF HOLE (FEET) <u>65'</u>
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PROSONIC® CORPORATION MONITORING WELL LOG

CLIENT NAME <u>North Jackson</u>	DRILL TEAM <u>Chris B, Mike A,</u>
PROJECT NAME <u>Eagle</u>	DRILLING METHOD <u>H, S, A</u>
LOCATION <u>Big Bay, Mt</u>	DATE <u>7/28/05</u> PROJECT NUMBER <u>2355935</u>
BORING NUMBER <u>QAL-029A</u>	DEVELOPMENT METHOD _____

WELL MATERIALS USED FEET OF 5 FOOT RISER <u>1</u> FEET OF 10 FOOT RISER <u>4</u> FEET OF SCREEN <u>10</u> PUSH ON CAPS <u>1</u> BOTTOM PLUGS <u>1</u> LOCKING PLUGS <u>1</u> LOCKS <u>—</u> BAGS OF SAND <u>8</u> BAGS OF HOLE PLUG <u>9</u> BUCKETS OF PELLETS <u>—</u> BAGS OF BENTONITE GEL <u>—</u> BAGS OF CEMENT <u>—</u> BAGS OF CONCRETE MIX <u>3</u> STAND UP COVERS <u>1</u> MANHOLE COVERS <u>—</u> 55 GALLON DRUMS <u>—</u> FEET OF SURFACE CASING <u>3</u> ROLLS OF PLASTIC <u>—</u> TYVEK SUITS <u>—</u> OUTER GLOVES <u>—</u> INNER GLOVES <u>—</u> GUARD POSTS <u>—</u> OTHER <u>—</u> OTHER <u>—</u>	*Not to Scale	TYPE OF PROTECTIVE COVER <u>4" Rammed</u> STICK-UP OF RISER PIPE <u>3.0"</u> TYPE OF SURFACE SEAL <u>Concrete</u> RISER PIPE I.D. (INCHES) <u>2.0"</u> TYPE OF RISER PIPE <u>Sch 40</u> BOREHOLE DIAMETER (INCHES) <u>5.25'</u> TYPE OF BACKFILL <u>Bent chip 3/8</u> DEPTH TO TOP OF SEAL (FEET) <u>33'</u> TYPE OF SEAL <u>Bentonite Chip</u> DEPTH TO TOP OF SAND PACK (FEET) <u>33' 36'</u> SIZE OF SAND PACK <u>K&E #2</u> DEPTH TO TOP OF SCREEN (FEET) <u>37'</u> SCREEN I.D. (INCHES) <u>2.0"</u> TYPES OF SCREEN <u>Sch 40 PVC</u> LENGTH OF SCREEN (FEET) <u>10'</u> SLOT SIZE OF SCREEN (INCHES) <u>0.10</u> DEPTH TO BOTTOM OF SCREEN (FEET) <u>47'</u> TYPE OF BACKFILL BELOW SCREEN <u>—</u> DEPTH TO BOTTOM OF HOLE (FEET) <u>47'</u>
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PROSONIC® CORPORATION MONITORING WELL LOG

CLIENT NAME <u>North Jackson</u>	DRILL TEAM <u>Chris B. Mikel</u>
PROJECT NAME <u>Eagle</u>	DRILLING METHOD <u>H.S.A</u>
LOCATION <u>Big Bay, MS</u>	DATE <u>7/28/05</u> PROJECT NUMBER <u>235583</u>
BORING NUMBER <u>QAL-029D</u>	DEVELOPMENT METHOD _____

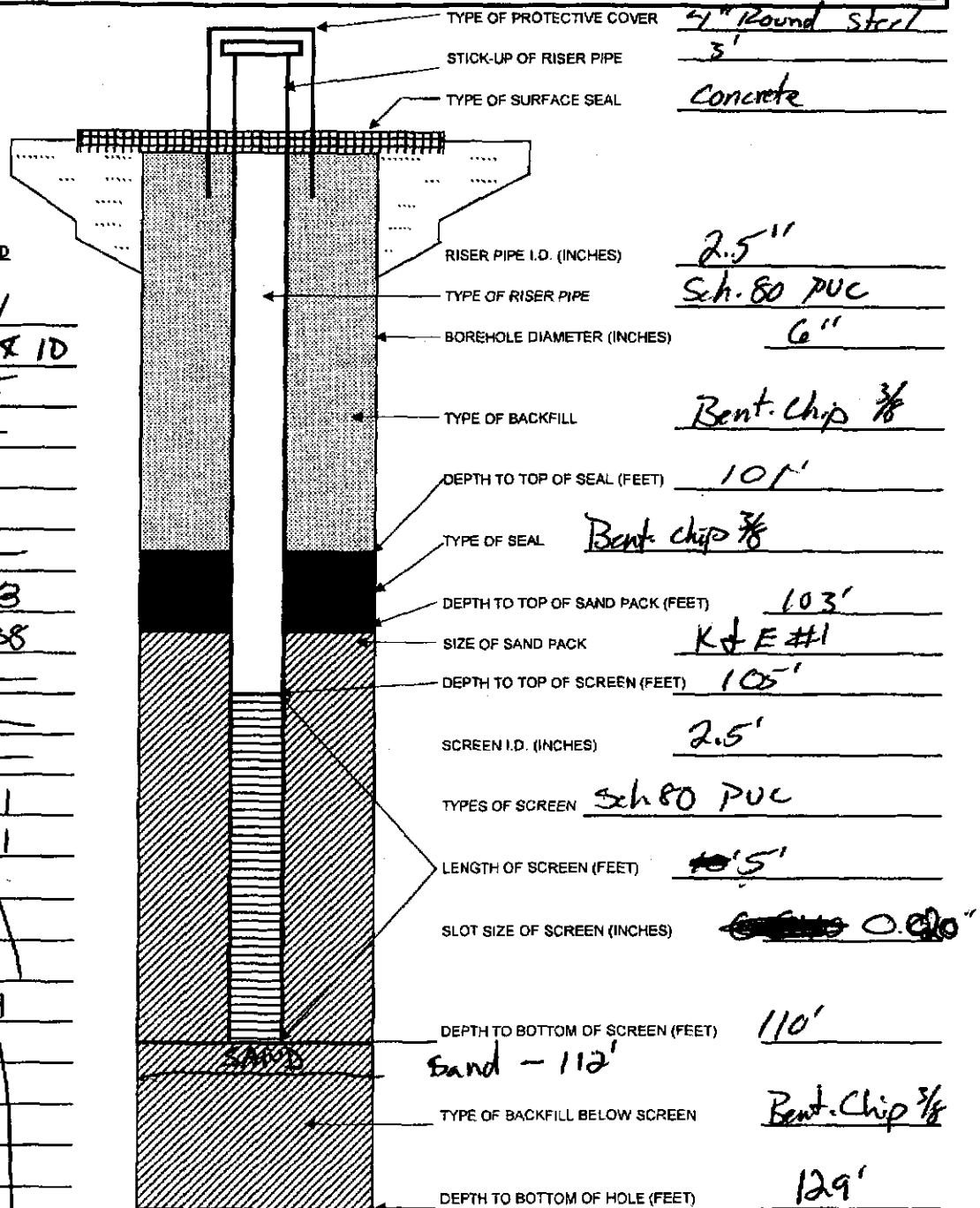
WELL MATERIALS USED FEET OF 5 FOOT RISER <u>5(1)</u> FEET OF 10 FOOT RISER <u>7</u> FEET OF SCREEN <u>5</u> PUSH ON CAPS <u>1</u> OTTOM PLUGS <u>1</u> LOCKING PLUGS <u>1</u> LOCKS <u>1</u> BAGS OF SAND <u>8</u> BAGS OF HOLE PLUG <u>5</u> BUCKETS OF PELLETS <u>1</u> BAGS OF BENTONITE GEL <u>1</u> BAGS OF CEMENT <u>1</u> BAGS OF CONCRETE MIX <u>3</u> STAND UP COVERS <u>1</u> MANHOLE COVERS <u>1</u> 55 GALLON DRUMS <u>1</u> FEET OF SURFACE CASING <u>3</u> ROLLS OF PLASTIC _____ TYVEK SUITS _____ OUTER GLOVES _____ INNER GLOVES _____ GUARD POSTS _____ THER _____ OTHER _____	*Not to Scale	TYPE OF PROTECTIVE COVER <u>4" Round</u> STICK-UP OF RISER PIPE <u>2'</u> TYPE OF SURFACE SEAL <u>Concrete</u> RISER PIPE I.D. (INCHES) <u>20"</u> TYPE OF RISER PIPE <u>S480</u> BOREHOLE DIAMETER (INCHES) <u>5.25"</u> TYPE OF BACKFILL <u>Bent Chip 2/8</u> DEPTH TO TOP OF SEAL (FEET) <u>6.5'</u> TYPE OF SEAL <u>Bentonite Chip</u> DEPTH TO TOP OF SAND PACK (FEET) <u>6.8'</u> SIZE OF SAND PACK <u>K+E #1</u> DEPTH TO TOP OF SCREEN (FEET) <u>6.9'</u> SCREEN I.D. (INCHES) <u>20"</u> TYPES OF SCREEN <u>Sch. 40</u> LENGTH OF SCREEN (FEET) <u>5'</u> SLOT SIZE OF SCREEN (INCHES) <u>.010</u> DEPTH TO BOTTOM OF SCREEN (FEET) <u>7.4'</u> TYPE OF BACKFILL BELOW SCREEN <u>Sand</u> DEPTH TO BOTTOM OF HOLE (FEET) <u>7.5'</u>
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PROSONIC® CORPORATION MONITORING WELL LOG

CLIENT NAME Kennecott - North Jackson DRILL TEAM DAN O. Mickey, Eric G.
 PROJECT NAME Eagle DRILLING METHOD Sonic
 LOCATION Big Bay ME DATE 8-7-05 PROJECT NUMBER 2355433
 BORING NUMBER QA-031 DEVELOPMENT METHOD _____

WELL MATERIALS USED

FEET OF 5 FOOT RISER	<u>1</u>
FEET OF 10 FOOT RISER	<u>10</u>
FEET OF SCREEN	<u>5</u>
PUSH ON CAPS	<u>1</u>
BOTTOM PLUGS	<u>1</u>
LOCKING PLUGS	<u>1</u>
LOCKS	<u>1</u>
BAGS OF SAND	<u>8</u>
BAGS OF HOLE PLUG	<u>38</u>
BUCKETS OF PELLETS	<u>1</u>
BAGS OF BENTONITE GEL	<u>1</u>
BAGS OF CEMENT	<u>1</u>
BAGS OF CONCRETE MIX	<u>1</u>
STAND UP COVERS	<u>1</u>
MANHOLE COVERS	<u>1</u>
55 GALLON DRUMS	<u>1</u>
FEET OF SURFACE CASING	<u>1</u>
ROLLS OF PLASTIC	<u>1</u>
TYVEK SUITS	<u>1</u>
OUTER GLOVES	<u>1</u>
INNER GLOVES	<u>1</u>
GUARD POSTS	<u>1</u>
OTHER	<u>1</u>
OTHER	<u>1</u>



PROSONIC® CORPORATION MONITORING WELL LOG

CLIENT NAME

Kennecott North Jackson

DRILL TEAM

DAN O, Mickey H, Eric G

PROJECT NAME

Engle

DRILLING METHOD

Sonic

LOCATION

Rig Bay MA

DATE

7-24-05

PROJECT NUMBER

1355433

BORING NUMBER

CAL 041

DEVELOPMENT METHOD

None

WELL MATERIALS USED

FEET OF 5 FOOT RISER

1

FEET OF 10 FOOT RISER

10

FEET OF SCREEN

1

PUSH ON CAPS

1

OTTOM PLUGS

1

LOCKING PLUGS

1

LOCKS

1

BAGS OF SAND

8

BAGS OF HOLE PLUG

2

BUCKETS OF PELLETS

1

BAGS OF BENTONITE GEL

1

BAGS OF CEMENT

5

BAGS OF CONCRETE MIX

1

STAND UP COVERS

1

MANHOLE COVERS

1

55 GALLON DRUMS

1

FEET OF SURFACE CASING

3

ROLLS OF PLASTIC

1

TYVEK SUITS

1

OUTER GLOVES

1

INNER GLOVES

1

GUARD POSTS

1

OTHER

1

OTHER

1

TYPE OF PROTECTIVE COVER

2" x 10" Round

STICK-UP OF RISER PIPE

3

TYPE OF SURFACE SEAL

Concrete

RISER PIPE I.D. (INCHES)

2.0"

TYPE OF RISER PIPE

Sch. 40 PVC

BOREHOLE DIAMETER (INCHES)

6"

TYPE OF BACKFILL

Bent. Cement Slurry
Bent. chip 3/8

DEPTH TO TOP OF SEAL (FEET)

88'

TYPE OF SEAL

Bent. chip 3/8

DEPTH TO TOP OF SAND PACK (FEET)

92 1/2'

SIZE OF SAND PACK

1/4" E #1

DEPTH TO TOP OF SCREEN (FEET)

95'

SCREEN I.D. (INCHES)

2.0"

TYPES OF SCREEN

Sch. 40 PVC

LENGTH OF SCREEN (FEET)

10'

SLOT SIZE OF SCREEN (INCHES)

0.06

DEPTH TO BOTTOM OF SCREEN (FEET)

105'

SAND TO 107'

TYPE OF BACKFILL BELOW SCREEN

Bent. chip 3/8

DEPTH TO BOTTOM OF HOLE (FEET)

114'

*Not to Scale

PROSONIC® CORPORATION MONITORING WELL LOG

CLIENT NAME Kennebec - North Jackson
PROJECT NAME Eagle
LOCATION Big Bay MI
BORING NUMBER QA1041

DRILL TEAM DAUO, micky H, Eric G.
DRILLING METHOD Sonic
DATE 7-27-05 PROJECT NUMBER 2355933
DEVELOPMENT METHOD

WELL MATERIALS USED FEET OF 5 FOOT RISER <u> </u> FEET OF 10 FOOT RISER <u>3</u> FEET OF SCREEN <u>5</u> PUSH ON CAPS <u> </u> BOTTOM PLUGS <u>1</u> LOCKING PLUGS <u>1</u> LOCKS <u> </u> BAGS OF SAND <u>6</u> BAGS OF HOLE PLUG <u>10</u> BUCKETS OF PELLETS <u> </u> BAGS OF BENTONITE GEL <u> </u> BAGS OF CEMENT <u> </u> BAGS OF CONCRETE MIX <u> </u> STAND UP COVERS <u>1</u> MANHOLE COVERS <u> </u> 55 GALLON DRUMS <u> </u> FEET OF SURFACE CASING <u>3</u> ROLLS OF PLASTIC <u> </u> TYVEK SUITS <u> </u> OUTER GLOVES <u> </u> INNER GLOVES <u> </u> GUARD POSTS <u> </u> OTHER <u> </u> OTHER <u> </u>	*Not to Scale	TYPE OF PROTECTIVE COVER <u>4" Steel Round</u> STICK-UP OF RISER PIPE <u>3'</u> TYPE OF SURFACE SEAL <u>concrete</u> RISER PIPE I.D. (INCHES) <u>2.0"</u> TYPE OF RISER PIPE <u>Sch. 40 PVC</u> BOREHOLE DIAMETER (INCHES) <u>6"</u> TYPE OF BACKFILL <u>Rent. chip 3/8</u> DEPTH TO TOP OF SEAL (FEET) <u>30'</u> TYPE OF SEAL <u>Rent. chip 3/8</u> DEPTH TO TOP OF SAND PACK (FEET) <u>37 1/2'</u> SIZE OF SAND PACK <u>K&E #1</u> DEPTH TO TOP OF SCREEN (FEET) <u>35'</u> SCREEN I.D. (INCHES) <u>2.0"</u> TYPES OF SCREEN <u>Sch 40 PVC machine slot</u> LENGTH OF SCREEN (FEET) <u>5'</u> SLOT SIZE OF SCREEN (INCHES) <u>.010</u> DEPTH TO BOTTOM OF SCREEN (FEET) <u>40'</u> <u>SAND TO 42'</u> TYPE OF BACKFILL BELOW SCREEN <u>Rent. Chip 3/8</u> DEPTH TO BOTTOM OF HOLE (FEET) <u>57'</u>
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PROSONIC® CORPORATION MONITORING WELL LOG

CLIENT NAME <u>North Jackson</u>	DRILL TEAM <u>Chris B., Mike A.</u>
PROJECT NAME <u>Eagle</u>	DRILLING METHOD <u>H.S.A.</u>
LOCATION <u>Big Bay, ME</u>	DATE <u>7-27-05</u> PROJECT NUMBER <u>2355933</u>
BORING NUMBER <u>QAL-043</u>	DEVELOPMENT METHOD _____

WELL MATERIALS USED FEET OF 5 FOOT RISER <u>1</u> FEET OF 10 FOOT RISER <u>3</u> FEET OF SCREEN <u>5</u> PUSH ON CAPS <u>1</u> BOTTOM PLUGS <u>1</u> LOCKING PLUGS <u>1</u> LOCKS <u>1</u> BAGS OF SAND <u>8</u> BAGS OF HOLE PLUG <u>6</u> BUCKETS OF PELLETS <u>1</u> BAGS OF BENTONITE GEL <u>1</u> BAGS OF CEMENT <u>1</u> BAGS OF CONCRETE MIX <u>3</u> STAND UP COVERS <u>1</u> MANHOLE COVERS <u>1</u> 55 GALLON DRUMS <u>1</u> FEET OF SURFACE CASING <u>3</u> ROLLS OF PLASTIC _____ TYVEK SUITS _____ OUTER GLOVES _____ INNER GLOVES _____ GUARD POSTS _____ OTHER _____ OTHER _____		TYPE OF PROTECTIVE COVER <u>4" Round</u> STICK-UP OF RISER PIPE <u>3'</u> TYPE OF SURFACE SEAL <u>Concrete</u> RISER PIPE I.D. (INCHES) <u>20"</u> TYPE OF RISER PIPE <u>Sch. 40</u> BOREHOLE DIAMETER (INCHES) <u>5.25"</u> TYPE OF BACKFILL <u>Bent. Chip 3/8</u> DEPTH TO TOP OF SEAL (FEET) <u>26'</u> TYPE OF SEAL <u>Bentonite Chip</u> DEPTH TO TOP OF SAND PACK (FEET) <u>29'</u> SIZE OF SAND PACK <u>21"</u> DEPTH TO TOP OF SCREEN (FEET) <u>30'</u> SCREEN I.D. (INCHES) <u>20"</u> TYPES OF SCREEN <u>Sch 40 PVC</u> LENGTH OF SCREEN (FEET) <u>5'</u> SLOT SIZE OF SCREEN (INCHES) <u>2010</u> DEPTH TO BOTTOM OF SCREEN (FEET) <u>35'</u> TYPE OF BACKFILL BELOW SCREEN <u>Sand</u> DEPTH TO BOTTOM OF HOLE (FEET) <u>37'</u>
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*Not to Scale

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1454

Started: 7/27/2005

Total Depth (ft): 64

Completed: 7/27/2005

Easting (UTM): 431771.38

Northing (UTM): 5177560.05

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)	
0								no recovery	0-2: Cement 6 inch diameter borehole	
				5YR 4/4		↑ dry ↓	SP	Unsaturated outwash: sand, poorly graded, mostly medium-coarse grained, reddish brown	2-32: Bentonite	
				5 YR 4/6		↑ dry ↓	SP	sand, poorly graded, mostly fine-medium sand, mostly quartz with 10-20% mafic grains, yellowish red		
10						↑ ↓	SP	sand, poorly graded, fine-medium grained with 5-10% coarse sand and gravel, brown		
				7.5YR 4/4		↑ moist ↓			0-35: PVC Casing 2 inch diameter	
20										

Owner: Kennecott Minerals Co.
Contractor: Prosonic
Geologist: DWW, North Jackson Co.
Sampling method: Sonic 4" continuous core

Northing (UTM): 5177560.05

Page 2 of 4

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1454

Started: 7/27/2005

Total Depth (ft): 64

Completed: 7/27/2005

Easting (UTM): 431771.38

Northing (UTM): 5177560.05

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
40					7.5 YR 4/4		saturated		
50					7.5 YR 4/4		↑	SP sand, poorly graded, mostly fine grained, brown	45-47: Sand
					7.5 YR 4/4		↓	SM-ML Transitional deposits: sandy silt, brown	47-64: Bentonite
60							↑	CL Lacustrine deposit: lean clay, soft, medium-high plasticity	

North
Jackson
Company

Boring/Well Construction Report

Bore Hole: QAL024

Project: Eagle

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1454

Started: 7/27/2005

Total Depth (ft): 64

Completed: 7/27/2005

Easting (UTM): 431771.38

Northing (UTM): 5177560.05

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
60				7.5 YR 4/4		← saturated	Bedrock: peridotite, competent and hard. very dark greenish gray, phaneritic texture, with some tight quartz-filled fractures	
				Gley I 3/1				TD=64

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1451

Started: 7/27/2005

Total Depth (ft): 120

Completed: 7/27/2005

Easting (UTM): 432133.30

Northing (UTM): 5177388.69

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
0								SP SP sand, poorly graded, fine-medium grained with black organic soil, roots and woody plant litter Unsaturated Outwash: sand, poorly graded, mostly fine-medium sand with trace gravel, red	0-2: Cement 6 inch diameter borehole 2-33: Bentonite
10					2.5YR 4/8		moist	SP sand, poorly graded, mostly fine-medium sand trace coarse sand, fining downward, light reddish brown	0-35: PVC Casing 2 inch diameter
20					5YR 6/3			SP-SM silty fine sand, light reddish brown	

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1451

Started: 7/27/2005

Total Depth (ft): 120

Completed: 7/27/2005

Easting (UTM): 432133.30

Northing (UTM): 5177388.69

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
30					5YR 6/3		slightly moist		
40			7.5YR 4/4				saturated	SP-SM Saturated Outwash: silty sand, very fine grained, brown	33-45: Sand 35-45: PVC Screen, 2 inch diameter
			7.5YR 4/4				saturated	SP sand, poorly graded, mostly fine-medium grained, brown	45-47: Sand
50			7.5YR 4/4				saturated	SP sand, poorly graded, mostly medium to coarse grained, brown	47-120: Bentonite

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Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1451

Started: 7/27/2005

Total Depth (ft): 120

Completed: 7/27/2005

Easting (UTM): 432133.30

Northing (UTM): 5177388.69

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)		
60				7.5YR 4/4		← ↑ saturated	SP	sand, poorly graded, mostly fine to medium grained, brown			
70				7.5YR 4/4		← ↑ saturated	ML	Transitional Deposits: silt, fining downward to clayey silt, brown			
80				7.5YR 4/4		← ↑ saturated	SP	Saturated Outwash: sand, poorly graded, mostly fine- medium grained coarsening downward to medium- coarse grained, brown			

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Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1451

Started: 7/27/2005

Total Depth (ft): 120

Completed: 7/27/2005

Easting (UTM): 432133.30

Northing (UTM): 5177388.69

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
80								
							CL	
				7.5YR 4/4		← saturated →	Lacustrine Deposit: lean clay, medium plasticity, brown	
90								
				7.5YR 4/4		← saturated →	SP	
							Saturated Outwash: sand, poorly graded, mostly fine- medium grained, brown	
100							SC	
				7.5YR 4/4		← saturated →	clayey sand, brown	
							SP	
							sand, poorly graded, with gravel and cobbles, brown	

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1458

Started: 7/28/2005

Total Depth (ft): 118

Completed: 7/28/2005

Easting (UTM): 432239.74

Northing (UTM): 5177738.88

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)	
0					5YR 5.6		dry	SP	Unsaturated Outwash: sand, poorly graded, mostly fine-medium grained, trace coarse sand, yellowish red, very loose	0-2: Cement 6 inch diameter borehole	
					5YR 6.5		dry	SP	sand, poorly graded, mostly fine-medium grained, trace coarse sand, light reddish brown, loose		
10					5YR 6.5		dry	SP	sand, poorly graded, mostly fine-medium grained, trace coarse sand, light reddish brown with gray mottling, loose	0-35: PVC Casing, 2 inch diameter	
20								SP	sand, mostly medium-coarse grained with well-rounded crystalline (gnessic) granitoid cobbles, very loose, light brown with dark gray mottling		

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1458

Started: 7/28/2005

Total Depth (ft): 118

Completed: 7/28/2005

Easting (UTM): 432239.74

Northing (UTM): 5177738.88

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
30				7.5YR 6/3		slightly moist		
40				7.5YR 4/3		wet	SP-SM Saturated Outwash: silty sand, mostly fine to very fine grained, loose, fining downward, brown	32-45: Sand 35-45: PVC Screen, 2 inch diameter 45-47: Sand
50				7.5YR			ML Transitional Deposits: sandy silt, medium stiff, brown	47-118: Bentonite

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.
Contractor: Prosonic
Geologist: DWW, North Jackson Co.
Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1458
Started: 7/28/2005
Total Depth (ft): 118
Completed: 7/28/2005
Easting (UTM): 432239.74
Northing (UTM): 5177738.88

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)	
60				4/3		w	SP-SW	Saturated Outwash: sand, poorly sorted, mostly coarse grained, with platy angular mafics and granitoid cobbles, brown		
				7.5YR 4/3		wet				
70				7.5YR 4/3		saturated	SP	sand, mostly fine-medium grained with 10% coarse sand and trace gravel, brown		
							SP	sand, poorly sorted, mostly fine-medium grained, trace gravel and cobbles, brown		

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1458

Started: 7/28/2005

Total Depth (ft): 118

Completed: 7/28/2005

Easting (UTM): 432239.74

Northing (UTM): 5177738.88

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
80				7.5YR 4/3		— saturated		
90				7.5YR 4/3		↑ saturated	SP sand, poorly sorted, mostly fine grained, brown	
100				7.5YR 4/3		↑ saturated	SP sand, poorly sorted, mostly fine-medium grained, brown	

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.
Contractor: Prosonic
Geologist: DWW, North Jackson Co.
Sampling method: Sonic 4" continuous core

Started: 7/28/2005
Completed: 7/28/2005

Surface Elevation (ft MSL): 1458
Total Depth (ft): 118
Easting (UTM): 432239.74
Northing (UTM): 5177738.88

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description			Well Construction (Sonic Rig Installation)	
110					7.5YR 4/3		saturated		SP	sand, poorly sorted, mostly coarse grained, with gravel		
					5YR 3/4		saturated		SC-SM	Glacial Till: clayey sand, very stiff, dark reddish brown		
					5YR 3/4		↑ saturated ↓		GC	gravelly clay, dark reddish brown		
										Bedrock, argillaceous siltstone, very fine grained, dark greenish gray		
TD=118												

Boring/Well Construction Report

Bore Hole: **QAL027**
Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1458

Started: 7/29/2005

Total Depth (ft): 50

Completed: 7/29/2005

Easting (UTM): 432413.64

Northing (UTM): 5177647.70

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
0					7.5YR 5.8	1 2 4 4 4 5 6 5 4 4 5 4 1 4 4 6	moist	OL Organic silty sand, fine to medium grained, strong brown	0-2: Cement 6 inch diameter borehole
								Unsaturated Outwash: Sand, poorly graded, mostly fine to medium grained with trace coarse sand, light brown	2-37: Bentonite
10					7.5YR 6.4	2 4 5 7 4 5 7 4 4 5 6 3 4 4 7	dry	SP sand, poorly graded, medium grained, light brown	0-38: PVC Casing 2 inch diameter
20						3 5 5 8 1 2 3 5			

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1458

Started: 7/29/2005

Total Depth (ft): 50

Completed: 7/29/2005

Easting (UTM): 432413.64

Northing (UTM): 5177647.70

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
20					7.5YR 6/4	2 3 5 6 3 3 4 5 3 3 4 8 3 4 5 6	dry		
30					5YR 6/3	4 5 7 8 3 4 8 14	dry	SP sand, poorly graded, fine to medium grained, light reddish brown	
40					5YR 4/3	3 5 6 8	moist	SP sand, poorly graded, fine to medium grained, reddish brown	37-48: Sand

Boring/Well Construction Report

Bore Hole: **QAL027**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1458

Started: 7/29/2005

Total Depth (ft): 50

Completed: 7/29/2005

Easting (UTM): 432413.64

Northing (UTM): 5177647.70

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Auger Rig Installation)	
40					5YR 4/3		↑ saturated ↓	SP	Saturated Outwash: Sand, poorly graded, fine to medium grained, reddish brown	38-48: PVC Screen, 2 inch diameter	
					5YR 4/3		↑ saturated ↓	ML	Transitional Deposits: Clayey silt, reddish brown		
50										48-50: Sand	TD-50

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split-spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1461

Started: 7/28/2005

Total Depth (ft): 65

Completed: 7/28/2005

Easting (UTM): 432617.07

Northing (UTM): 5177779.17

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
0					7.5YR 5.8	1 2 4 4 3 4 4 4 2 4 6 7 2 4 4 6 2 4 5 5 2 3 5 7 3 5 7 9	↑	SP sand, poorly sorted, mostly fine grained, with organics, strong brown Unsaturated Outwash: sand, mostly fine-medium grained, trace coarse sand, brown	0-2: Cement. 6 inch diameter borehole
10					7.5YR 5.4	2 4 5 6 4 4 4 5 2 3 5 7 3 5 7 9	↑ slightly moist		2-52 Bentonite
20					7.5YR 6.4	6 6 7 8 3 5 3 5 3 3 4 5 2 3 4 5	↑ dry	SP sand, poorly sorted, mostly medium sand, some coarse sand, light brown	0-53: PVC Casing 2 inch diameter
					7.5YR 5/3	3 3 3 4 3	↑ dry	SP sand, poorly sorted, mostly medium-coarse grained, brown	

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split-spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1461

Started: 7/28/2005

Total Depth (ft): 65

Completed: 7/28/2005

Easting (UTM): 432617.07

Northing (UTM): 5177779.17

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
30			7.5YR 6.3			4 4 6 3 4 4 6	moist	SP sand, poorly sorted, mostly medium grained, brown	
			7.5YR 6.3			6 8 8 9	moist	SP sand, poorly sorted, mostly medium grained some coarse sand and trace gravel, light brown	
			7.5YR 6.3			4 6 8 10	moist	SP sand, poorly sorted, mostly fine-medium grained, light brown	
40			7.5YR 6.3			5 9 9 14	moist	SP sand, poorly sorted, mostly fine grained, light brown	
			7.5YR 6.3			4 9 8 11	dry	SP same as above, dry	
50			5YR 4/3				dry	SP Saturated Outwash: sand, poorly sorted, mostly fine grained, reddish brown	

**North
Jackson
Company**

Boring/Well Construction Report

Bore Hole: **QAL028**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split-spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1461

Started: 7/28/2005

Total Depth (ft): 65

Completed: 7/28/2005

Easting (UTM): 432617.07

Northing (UTM): 5177779.17

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
60				5YR 4.3	6 12 12	↓ ↑	SM silty sand, reddish brown	52-63: Sand 53-63: PVC Screen, 2 inch diameter 63-65: Sand TD=65

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW/AJM, North Jackson Co.

Sampling method: Split-spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1457

Started: 7/27/2005

Total Depth (ft): 75

Completed: 7/28/2005

Easting (UTM): 432550.06

Northing (UTM): 5177525.81

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Auger Rig Installation)		
0					7.5YR 5/6	1 2 3	dry	OL	sandy silt with organic material, strong brown	0-2: Cement 6 inch diameter borehole		0-2: Cement 6 inch diameter borehole
					7.5YR 6/4	3 4 4 6 5 6 7 9 3 6 7 7	dry	SP	Unsaturated Outwash: sand, poorly sorted, mostly fine-medium grained, trace coarse sand, light brown	2-36 Bentonite		2-68 Bentonite
10						2 3 5 4 4 4 6 5 2 4 5 7 3 6 7 10		SP	sand, poorly sorted, mostly medium grained, brown	0-47: PVC Casing 2 inch diameter		0-69: PVC Casing 2 inch diameter
					7.5YR 5/4	6 7 6 6 3 6 6 3 3 2 3 3 4 3 3 3 3 2 3 6 6	moist	SP	at 14 - 18 with trace coarse sand			
20								SP	at 18 - 20 feet some fine sand			

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Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW/AJM, North Jackson Co.

Sampling method: Split-spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1457

Started: 7/27/2005

Total Depth (ft): 75

Completed: 7/28/2005

Easting (UTM): 432550.06

Northing (UTM): 5177525.81

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
30						4 4 7 8 3 6 6 7	moist	SP sand, poorly graded, mostly medium-coarse grained, brown	
			7.5YR 5/4			6 7 10 11			
40						5 5 6 8	saturated	SP Saturated Outwash: sand, poorly sorted, mostly fine grained, reddish brown	36-47: Sand 37-47: PVC Screen, 2 inch diameter
			5YR 4/3			5 6 7 8			
						5 7 10 11	saturated	SM-ML Transitional Deposits: silty sand, reddish brown	
50			5YR 4/3						
								CL-CH Lacustrine Deposits: clay lean to fat, medium to high plasticity, reddish brown	

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Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW/AJM, North Jackson Co.

Sampling method: Split-spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1457

Started: 7/27/2005

Total Depth (ft): 75

Completed: 7/28/2005

Easting (UTM): 432550.06

Northing (UTM): 5177525.81

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
		EAG-1001512	Shelby Tube	5YR 4/3	5 5 4 6	↓ saturated		
60					5 6 8 8	↑ saturated	SM Saturated Outwash: silty sand, trace coarse sand, reddish brown	
				5YR 4/3	1 5 9 10	↓ saturated		
70					5 5 9 25	↓ saturated	SP sand, poorly sorted, mostly medium-coarse grained, reddish brown	
				5YR 4/4	10 12 10 15	↓ saturated		68-75: Sand 69-74: PVC Screen, 2 inch diameter TD=75

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Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1461

Started: 7/28/2005

Total Depth (ft): 105

Completed: 7/28/2005

Easting (UTM): 432889.01

Northing (UTM): 5177586.22

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)		
0							SP	Unsaturated Outwash: sand, poorly graded, mostly fine-medium grained, trace gravel, loose, light reddish brown with gray mottling			
10				5YR 6/4		dry					
20				5YR 6/4		dry	SP	same as above, trace cobbles			
							SP	sand, poorly sorted, mostly fine-medium grained, 5-10% gravel, light reddish brown with gray mottling			

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Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1461

Started: 7/28/2005

Total Depth (ft): 105

Completed: 7/28/2005

Easting (UTM): 432889.01

Northing (UTM): 5177586.22

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
30				5YR 6/4		dry		
							SP	
				5YR 6/4		dry	sand, mostly fine-medium grained, trace coarse sand, light reddish brown	
							SP-SM	
40							sand, mostly fine grained fining downward to fine sand with silt, loose, reddish brown	
				5YR 4/3		dry		
50								
						moist	SP	
							sand, poorly sorted, mostly	

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.
Contractor: Prosonic
Geologist: DWW, North Jackson Co.
Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1461
Total Depth (ft): 105
Easting (UTM): 432889.01
Northing (UTM): 5177586.22

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
				5YR 4/3		slightly	fine-medium grained, reddish brown	
60				5YR 4/3		wet	CL Lacustrine Deposit: silty clay, very stiff (qu = 3.0), low to moderate plasticity, brown with red and gray laminations (<1 mm)	
70							SP Unsaturated Outwash: sand, poorly sorted, mostly fine- medium grained, fining downward, reddish brown to red	
80				2.5YR 4/4-4/6		moist		

Boring/Well Construction Report

Bore Hole: QAL030

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1461

Started: 7/28/2005

Total Depth (ft): 105

Completed: 7/28/2005

Easting (UTM): 432889.01

Northing (UTM): 5177586.22

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1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465

Started: 8/3/2005

Total Depth (ft): 129

Completed: 8/4/2005

Easting (UTM): 432919.91

Northing (UTM): 5177743.73

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)	
0				5 YR 3/4		moist	SP	Unsaturated Outwash: sand, poorly sorted, mostly fine-medium grained, 5-10% rounded coarse sand, trace roots, dark reddish brown		0-2: Cement
							SP	sand, poorly sorted, mostly fine-medium grained, 5-10% rounded coarse sand and gravel, loose, brown with dark brown and red color striations		2-103: Bentonite
10				7.5 YR 4/4		moist				0-105: PVC Casing, 2.5 inch diameter
20								sand, poorly sorted, mostly fine-medium grained 10-		

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465

Started: 8/3/2005

Total Depth (ft): 129

Completed: 8/4/2005

Easting (UTM): 432919.91

Northing (UTM): 5177743.73

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
30					7.5YR 4/4		↑ moist	SP fine-medium grained, 20% rounded coarse sand and gravel, loose, brown with dark brown and red striations	
							↑ moist	SP sand, poorly sorted, mostly fine grained, 5-10% rounded coarse sand, brown with dark brown striations	
40							↑ moist	SP-SM at 37 fine silty sand	
			EAG-1001493	grain size bag	7.5YR 5/4		↑ dry	SP at 45 fine grained	
							↑ dry	SP at 47 fine-medium grained, medium to dense	
50							↑	SP at 50 5% rounded gravel	

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Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465

Started: 8/3/2005

Total Depth (ft): 129

Completed: 8/4/2005

Easting (UTM): 432919.91

Northing (UTM): 5177743.73

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
60	EAG- 1001495	grain size bag	5YR 5.3	moist	saturated	MI	Transitional Deposit: silt, reddish brown	
			7.5YR 4.4			SP	Unsaturated Outwash: sand, poorly sorted, mostly fine to medium grained, trace cobbles, brown	
70			7.5YR 5.4			SP-SM	silty sand, fine grained, brown	

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Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465

Started: 8/3/2005

Total Depth (ft): 129

Completed: 8/4/2005

Easting (UTM): 432919.91

Northing (UTM): 5177743.73

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)	
80	EAG- 1001496	gram size bag	7.5YR 4.3			moist	SP-SM	at 78 dark brown weakly cemented "chunks"		
			5YR 4.4			moist	SP-SM	sand, poorly graded, mostly fine grained with weakly cemented "chunks", reddish brown		
						moist	SP	sand, poorly sorted mostly fine-medium grained, brown		
90			7.5YR 5.4			moist				
100							SP-SM	Saturated Outwash: sand, mostly fine grained with silt, brown		

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Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465

Started: 8/3/2005

Total Depth (ft): 129

Completed: 8/4/2005

Easting (UTM): 432919.91

Northing (UTM): 5177743.73

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
110	EAG-1001501	grain size bag	7.5YR 5.4	saturated				103-110: Sand
	EAG-1001502	grain size bag	7.5YR 5.4 5YR 4.3 5YR 4.3			SM-ML	Transitional Deposit: sandy silt, brown	105-110: PVC Screen, 2.5 inch diameter
						GC	Glacial Till: gravelly clay, rounded to subrounded gravel, reddish brown	110-112: Sand
						SP		112-129: Bentonite
						SM-SC	sand, mostly fine-medium grained, 20-30% rounded coarse sand and gravel, reddish brown	
120							silty clayey sand with subrounded to subangular gravel, dark gray	
	EAG-1001504	grain size bag	7.5YR 4.1				Bedrock, argillaceous siltstone, very fine grained, dark greenish gray	TD=129

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Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split- spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1456

Started: 8/1/2005

Total Depth (ft): 50

Completed: 8/1/2005

Easting (UTM): 432403.27

Northing (UTM): 5177485.68

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
0				7.5YR 5.8	1 2 2 1 1 2 1 1 2 2 4 4 2 4 4 5 1 4 5 6 1 6 6 6 3 4 5 6	moist	SP Topsoil: sand, poorly sorted, mostly fine grained, with organics, strong brown	
				7.5YR 5.4	1 2 1 1 1 2 2 4 4 2 4 4 5 1 4 5 6 1 6 6 6 3 4 5 6	moist	SP Unsaturated Outwash: sand, poorly sorted, mostly fine grained, trace coarse sand, brown	
10				7.5YR 5.4	1 4 4 5 2 3 5 5 2 3 5 5 5 6 7 9 3 6 11 11	moist	SP sand, poorly sorted, mostly medium grained, trace coarse sand, brown	
				7.5YR 5.4	2 3 5 5 2 3 5 5 6 7 9 3 6 11 11	moist	SP sand, poorly sorted, mostly fine-medium grained, little silt, brown	
20				7.5YR 5.4	2 3 5 5 2 3 5 5 6 7 9 3 6 11 11	moist	SP sand, poorly sorted, mostly fine grained, trace coarse sand, brown	
				7.5YR 5.4	4 7 6 8 4	moist	SP sand, mostly fine-medium grained, brown	

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Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split-spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1456

Started: 8/1/2005

Total Depth (ft): 50

Completed: 8/1/2005

Easting (UTM): 432403.27

Northing (UTM): 5177485.68

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
30					9 9 4 7 9 10	↓	SP sand, mostly fine-medium grained, 10% coarse sand, brown	
				7.5YR 5.4	3 4 5 6	↑ moist		
40					4 4 7 7	↓	SP Saturated Outwash: sand, mostly medium grained, 20% coarse sand, reddish brown	
				5YR 4.3	1 1 3 5	↑ saturated		
						↓	SP sand, mostly fine-medium grained, reddish brown	
				5YR 4.3	1 4 7 10	↑ saturated		
50						↓		TD=50

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split- spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1456

Started: 7/29/2005

Total Depth (ft): 50

Completed: 7/29/2005

Easting (UTM): 432477.43

Northing (UTM): 5177743.81

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
0					7.5YR 5/8	1 2 3	sl. moist	SP Topsoil: sand, poorly graded, mostly fine grained, with organics, strong brown	
						3 4 6 8 7 8 9 1 6 4 6 1 5 5 9 4 5 10	moist	SP Unsaturated Outwash: sand, poorly graded, mostly fine-medium grained, trace coarse sand, brown	
10					7.5YR 5/4	12 4 5 7 9 4 8 8 10 3 5 8 9	moist		
					5YR 5/4	4 5 6 7	moist	SP sand, poorly graded, mostly medium graded, trace coarse sand, reddish brown	
					5YR 5/4	4 6 5 5	moist	SP sand, poorly graded, medium grained, 10% coarse sand, reddish brown	
20					5YR 5/3	2 4 4 8 1 9 10 12	moist	SM sand, mostly fine grained, some silt, reddish brown	

Boring/Well Construction Report

Bore Hole: **QAL033**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split- spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1456

Started: 7/29/2005

Total Depth (ft): 50

Completed: 7/29/2005

Easting (UTM): 432477.43

Northing (UTM): 5177743.81

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
30			5YR 5/3			6 8 8 4	moist	SM sand, poorly sorted, mostly fine-medium grained, some silt, reddish brown	
			5YR 5/3			8 8 10	moist	SP sand, mostly fine-medium grained, reddish brown	
			5YR 5/3			3 3 6 8	moist	SP sand, poorly sorted, fine-medium grained, little silt, reddish brown	
40			5YR 5/3			3 7 7 7	moist	SP sand, poorly sorted, mostly fine grained, little silt, reddish brown	
			5YR 5/3			4 6 9 10	moist	SM sand, poorly sorted, mostly fine grained, reddish brown	
50			5YR 4/4			1 1 3 5	saturated	SM Transitional Deposit: sandy silt, reddish brown	TD=50

Boring/Well Construction Report

Bore Hole: QAL034

Project: Eagle

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split-spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1457

Started: 8/1/2005

Total Depth (ft): 50

Completed: 8/1/2005

Easting (UTM): 432520.79

Northing (UTM): 5177649.26

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Auger Rig Installation)				
0					7.5YR 4.6	2 2 3 4 3 4 5 5 4 5 5 4 4 5	↑ slightly moist ↓	SP	Topsoil: sand, poorly sorted, mostly fine-medium grained, with organics, strong brown					
						6 3 4 5 7 1 3 6 7 4 5 6 7 3 5 6 7 3 4 3 3		SP	Unsaturated Outwash: sand, poorly sorted, mostly fine-medium grained, trace coarse sand, brown					
10					7.5YR 5.4	3 3 3 2 3 3 3 5 2 2 3 4 3 3		↑ slightly moist ↓	SP	sand, poorly sorted, mostly medium grained, trace coarse sand, brown				
						3 3 3 5 2 2 3 4 3 3			SP	sand, poorly sorted, mostly medium grained, trace fine gravel, brown				
20					7.5YR 5.3	3 3 4 6 3								

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split-spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1457

Started: 8/1/2005

Total Depth (ft): 50

Completed: 8/1/2005

Easting (UTM): 432520.79

Northing (UTM): 5177649.26

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
30					7.5YR 5/3	5 5 5 3 3 5 8	slightly moist		
						4 5 7 8			
					5YR 4/3	3 1 2 6	wet	SM silty sand, reddish brown	
40					5YR 4/3	3 4 5 7	saturated	SP Saturated Outwash sand, poorly sorted, mostly fine-medium grained, reddish brown	
					5YR 4/3	2 2 4 12	saturated	SC Lacustrine Deposit: sandy clay with silt, reddish brown	
50									TD 50

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Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split-spoon with 4 25" ID HSA

Surface Elevation (ft MSL): 1457

Started: 8/1/2005

Total Depth (ft): 35

Completed: 8/1/2005

Easting (UTM): 432463.87

Northing (UTM): 5177537.50

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
0				7.5YR 5/8	1 2 3 3	sl. moist	SP Topsoil: sand, poorly sorted, mostly fine grained, with organics, strong brown	
					3 3 4 7 4 5 8 8 2 4 4 6 1 3 4 7 1 3 5 7 3 6 7 6 2 3 3 5 3 5 5 7 2 5 4 6 2 5 5 5 1 4 3 3 6	moist	SP Unsaturated Outwash: sand, poorly sorted, mostly fine grained, trace coarse sand, trace fine gravel, brown	
10				7.5YR 5/4				
20								
				7.5YR 5/4	3 5 6 3	moist	SP sand, poorly sorted, mostly fine-medium grained, trace coarse sand, brown	

**North
Jackson
Company**

Boring/Well Construction Report

Bore Hole: **QAL035**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM, North Jackson Co.

Sampling method: Split-spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1457

Started: 8/1/2005

Total Depth (ft): 35

Completed: 8/1/2005

Easting (UTM): 432463.87

Northing (UTM): 5177537.50

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
30						5 6 6 3 6 7 7	↓ ↑ moist ↓	SP sand, poorly sorted, mostly fine grained, brown	
					7.5YR 5.4				
						4 7 8 9			TD=35

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1464

Started: 8/4/2005

Total Depth (ft): 122

Completed: 8/4/2005

Easting (UTM): 432764.98

Northing (UTM): 5177839.57

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
0					7.5YR 3.4		moist	SP Topsoil: sand, poorly sorted, mostly fine-medium grained with organics, roots, dark brown	
					5YR 4.4			SP Unsaturated Outwash: sand, poorly sorted, mostly fine-medium grained, reddish brown	
								SP sand, poorly sorted, mostly fine-medium grained, 5-10% rounded coarse sand, brown with dark brown striations	
10					7.5YR 4.4		moist		
20					7.5YR		moist	SP sand, poorly sorted, mostly fine-medium grained, 20-30% rounded coarse sand	

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1464

Started: 8/4/2005

Total Depth (ft): 122

Completed: 8/4/2005

Easting (UTM): 432764.98

Northing (UTM): 5177839.57

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
					5/4		mc	and gravel, brown	
					7.5YR 5/4		moist	SP sand, poorly sorted, mostly fine grained sand, brown	
30					7.5YR 3/4		moist	SP sand, poorly sorted, mostly fine-medium grained, 5-10% rounded coarse sand, dark brown	
					7.5YR 5/4		moist	SP sand, poorly sorted, mostly medium grained, 20-30% rounded coarse sand, brown	
							moist	SP sand, poorly sorted, mostly fine-medium grained, 10-20% rounded coarse sand and gravel, brown	
40					7.5YR 4/3		moist		

**North
Jackson
Company**

Boring/Well Construction Report

Bore Hole: **QAL036**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1464

Started: 8/4/2005

Total Depth (ft): 122

Completed: 8/4/2005

Easting (UTM): 432764.98

Northing (UTM): 5177839.57

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
50					5YR 4/3		moist	SP sand, poorly sorted, mostly fine-medium grained, 5-10% rounded coarse sand, weakly cemented "chunks" of fines, reddish brown	
60			EAG-1001494	grain size bag	7.5YR 4/4		moist	SP sand, poorly sorted, mostly fine-medium grained, 5-10% rounded coarse sand and gravel, loose, brown	

Boring/Well Construction Report

Bore Hole: **QAL036**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1464

Started: 8/4/2005

Total Depth (ft): 122

Completed: 8/4/2005

Easting (UTM): 432764.98

Northing (UTM): 5177839.57

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
70					7.5YR 5/4		↑ saturated	SP Saturated Outwash: sand, poorly sorted, mostly fine-medium grained, 5-10% rounded coarse sand and gravel, loose, brown	
					7.5YR 4/3		↓ saturated	SM silty sand, brown	
							↑ saturated	SP-SM sand, poorly sorted, mostly fine grained, fining downward to silty sand, brown	
80		EAG-1001497	grain size bag	7.5YR 4/3			↓ saturated		
		EAG-1001498	grain size bag	5YR 5/3			↑ saturated	SM-ML Transitional Deposit: silty sand fining downward to silt, reddish brown	
90		EAG-1001499	grain size bag	5YR 5/3			↑ saturated	CL Lacustrine Deposit: lean clay, soft, reddish brown with gray and red laminations	

Northing (UTM): 5177839.57

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1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1464

Started: 8/4/2005

Total Depth (ft): 122

Completed: 8/4/2005

Easting (UTM): 432764 98

Northing (UTM): 5177839.57

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
120			EAG-1001503	grain size bag	44 5YR 3/4 5YR 3/4		saturated	20% rounded coarse sand, reddish brown GC gravelly clay, dark reddish brown SC clayey sand with gravel, dark red Bedrock, argillaceous siltstone, very fine grained, dark greenish gray	TD-122

**North
Jackson
Company**

Boring/Well Construction Report

Bore Hole: **QAL037**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465

Started: 8/1/2005

Total Depth (ft): 138

Completed: 8/1/2005

Easting (UTM): 432814.88

Northing (UTM): 5177881.16

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)		
0						↑	SP	Unsaturated Outwash: sand, poorly sorted, mostly fine-medium grained, 5-20% rounded to subrounded coarse sand			
						↓ moist					
						↑	SP	sand, poorly sorted, mostly fine-medium grained, trace coarse sand, light reddish brown			
10				5YR 6/4		↓ moist					
						↑	SP	sand, mostly fine-medium grained, light reddish brown to reddish brown			
20				5YR 6 1/4-5 1/4		↓ moist					
						↑	SP	sand, poorly sorted, mostly coarse sand, some gravel			
				5YR 6/4		↓	SP	sand, mostly fine-medium			
						↑					

North
Jackson
Company

Boring/Well Construction Report

Bore Hole: QAL037

Project: Eagle

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465

Started: 8/1/2005

Completed: 8/1/2005

Total Depth (ft): 138

Easting (UTM): 432814.88

Northing (UTM): 5177881.16

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
30								grained, light reddish brown to reddish brown	
40					5YR 6/4-5/4		moist		
50									

Boring/Well Construction Report

Bore Hole: **QAL037**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSI.): 1465

Started: 8/1/2005

Total Depth (ft): 138

Completed: 8/1/2005

Easting (UTM): 432814.88

Northing (UTM): 5177881.16

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
60					5YR 6/4		moist	SP sand, poorly sorted, mostly fine-medium grained with silty seams, light reddish brown	
					5YR 6/4		moist	ML Transitional Deposit: silt, light reddish brown	
70					5YR 6/4		moist	SP Unsaturated Outwash: sand, poorly sorted, mostly fine-medium grained, light reddish brown	
								SM-ML Saturated Outwash: silty sand, mostly fine grained, fining downward to silt.	

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465

Started: 8/1/2005

Total Depth (ft): 138

Completed: 8/1/2005

Easting (UTM): 432814.88

Northing (UTM): 5177881.16

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
80					5YR 6/4		saturated	light reddish brown	
								SM-ML Transitional Deposit: silty sand, mostly fine grained, fining downward to silt, light reddish brown	
90					5YR 6/4		saturated	SC Lacustrine Deposit: lean sandy clay, light reddish brown	
								CL lean clay, massive, moderate plasticity, red with bluish gray laminations	
100					2.5YR 4/6		saturated		
								SP-SM Saturated Outwash: sand,	

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.
Contractor: Prosonic
Geologist: DWW, North Jackson Co.
Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465
Started: 8/1/2005
Total Depth (ft): 138
Completed: 8/1/2005
Easting (UTM): 432814.88
Northing (UTM): 5177881.16

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
110				5YR 4/4- 7.5YR 4/4		saturated	poorly sorted, mostly fine-medium grained, some silt, reddish brown to brown	
				5YR 4/4- 7.5YR 4/4		saturated	SP-SM sand, mostly fine-medium grained, some silt, 10-20% coarse sand, reddish brown to brown	
120				5YR 4/4		saturated	SC Glacial Till: sandy clay, reddish brown	
				5YR 4/4		saturated	GC gravelly clay with cobbles, reddish brown	
120				5YR 4/4		turated		

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.
Contractor: Prosonic
Geologist: DWW, North Jackson Co.
Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465
Started: 8/1/2005
Total Depth (ft): 138
Completed: 8/1/2005
Easting (UTM): 432814.88
Northing (UTM): 5177881.16

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
130									
								Bedrock, argillaceous siltstone, very fine grained, dark greenish gray	
									TD=138

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.
Contractor: Prosonic
Geologist: DWW, North Jackson Co.
Sampling method: Sonic 4" continuous core

Started: 8/1/2005
Completed: 8/1/2005

Surface Elevation (ft MSL): 1463
Total Depth (ft): 109
Easting (UTM): 432819.75
Northing (UTM): 5177768.96

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
0				2.5YR 5/6- 5YR 5/6		moist	SP Unsaturated Outwash: sand, poorly sorted, mostly fine- medium grained, red to yellowish red	
10				5YR 6.4		moist	SP sand, poorly sorted, mostly fine grained, 5-10% dark fine-grained rounded to subrounded mafics, coarsening downward, light reddish brown	
20							SP sand, poorly sorted, mostly fine grained, 10-20% medium sand, trace coarse sand, light reddish brown	

Boring/Well Construction Report

Bore Hole: **QAL038**
Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.
Contractor: Prosonic
Geologist: DWW, North Jackson Co.
Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1463
Started: 8/1/2005
Completed: 8/1/2005
Total Depth (ft): 109
Easting (UTM): 432819.75
Northing (UTM): 5177768.96

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
30					5YR 6/4		moist		
								SP	
					5YR 6/4		moist	sand, poorly grained, mostly fine grained, 10-20% medium sand, light reddish brown	
40								SP	
					5YR 6/4		moist	sand, poorly grained, mostly fine grained, 2-10% medium sand, trace gravel, loose, light reddish brown	
50								SP-SM	
								sand, poorly sorted, mostly fine grained, fining downward to sandy silt.	

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1463

Started: 8/1/2005

Total Depth (ft): 109

Completed: 8/1/2005

Easting (UTM): 432819.75

Northing (UTM): 5177768.96

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
50					5YR 6/4		dry	light reddish brown with whitish pink, dry, stiff and friable silt layers	
60					5YR 5/4		moist	CL Lacustrine Deposit: sandy lean clay, moderate plasticity, soft (qu=0.45), reddish brown with very fine light bluish gray and red laminations	
					2 5YR 4/8		moist	SP Unsaturated Outwash: gravelly sand, red	
70					5YR 6/4		dry	SP sand, poorly sorted, mostly fine-medium grained, some gravel, light reddish brown	

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1463

Started: 8/1/2005

Total Depth (ft): 109

Completed: 8/1/2005

Easting (UTM): 432819.75

Northing (UTM): 5177768.96

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
80				5YR 6/4		← saturated	ML Transitional Deposit: silt, light reddish brown	
				7.5YR 4/3		← saturated	SP Saturated Outwash: sand, poorly sorted, mostly fine- medium grained, brown	
				7.5YR 4/3		← saturated	ML Transitional Deposit: silt, brown	
				7.5YR 4/3		← saturated	SP Saturated Outwash: sand, poorly grained, mostly fine- medium grained, brown	
						← saturated	ML Transitional Deposit: sandy silt, reddish brown	
90				5YR 6/4		← moist	SC sandy silt, reddish brown	
				5YR 6/4		← moist-wet	SC Glacial Till: clayey sand, very stiff, reddish brown	
100								

**North
Jackson
Company**

Boring/Well Construction Report

Bore Hole: **QAL038**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1463

Started: 8/1/2005

Total Depth (ft): 109

Completed: 8/1/2005

Easting (UTM): 432819.75

Northing (UTM): 5177768.96

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)		
100				5YR 6.4		moist-wet	GC	gravelly clay, very stiff (qu = 2.25), reddish brown			
								Bedrock, argillaceous siltstone, very fine grained, dark greenish gray			TD-109

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465

Started: 8/2/2005

Total Depth (ft): 140

Completed: 8/2/2005

Easting (UTM): 432870.96

Northing (UTM): 5177812.73

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
0					5YR 4.4		moist	SP Unsaturated Outwash: sand, poorly sorted, mostly fine-medium grained, 5-10% rounded coarse sand with organic roots, reddish brown	
					7.5YR 4.4		↑ moist ↓	SP sand, poorly sorted, mostly fine-medium grained, 5-10% rounded coarse sand, brown with dark brown striations	
10							↑	SP same as above with 5-10% gravel	
20					7.5YR		↓		

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465

Started: 8/2/2005

Total Depth (ft): 140

Completed: 8/2/2005

Easting (UTM): 432870.96

Northing (UTM): 5177812.73

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
30					5/4		mo		
40									
					7.5YR 4/3		mo st	SP-SM silty sand, medium dense, brown	
					7.5YR 3/3		mo st	SP-SM silty sand, medium dense, dark brown	
50									

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465

Started: 8/2/2005

Total Depth (ft): 140

Completed: 8/2/2005

Easting (UTM): 432870.96

Northing (UTM): 5177812.73

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
50					7.5YR 4.4		moist	SP sand, mostly fine-medium grained, 5% rounded coarse sand and gravel, brown	
					7.5YR 4.4		moist	SP-SM sand, poorly sorted, mostly fine grained, fining downward to silty sand, brown	
60					5YR 4.4		moist-wet	CL Lacustrine Deposit: lean clay, moderate plasticity, reddish brown	
					7.5YR 4.4		dry	SP Unsaturated Outwash: sand, poorly sorted, mostly medium grained, 20-40% rounded to subrounded coarse sand, gravel and cobbles, brown	
70					7.5YR 4.4			SP sand, poorly sorted, mostly fine-medium grained with 10-20% rounded coarse sand, fining downward to fine grained sand with 5-10% coarse sand, light brown	

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465

Started: 8/2/2005

Total Depth (ft): 140

Completed: 8/2/2005

Easting (UTM): 432870.96

Northing (UTM): 5177812.73

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
80					6.4				
					5YR 4.4			ML Transitional Deposit: silt, reddish brown	
					7.5YR 4.4			SP Unsaturated Outwash: sand, poorly sorted, mostly fine grained, medium density, brown	
					7.5YR 4.1			SP-SM silty sand, dark gray	
					5YR 4.3			SP-SM silty sand, 5-10% rounded coarse sand, reddish brown	
					7.5YR 4.1			SP-SM silty sand, dark gray	
					7.5YR 5.3			SP sand, poorly sorted, mostly fine-medium grained, 10-20% coarse sand fining downward to fine grained sand, brown	
100								SC Saturated Outwash: sandy	

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: PMK, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465

Started: 8/2/2005

Total Depth (ft): 140

Completed: 8/2/2005

Easting (UTM): 432870.96

Northing (UTM): 5177812.73

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
100					5YR 4.4			clay, reddish brown	
					5YR 4.4			SP sand, poorly sorted, mostly fine grained, reddish brown	
					5YR 4.4			SC sandy clay, reddish brown	
					5YR 4.4			SP sand, poorly sorted, mostly fine grained, reddish brown	
								SC sandy clay, reddish brown	
110					5YR 4.4				
					5YR 4.4			SP sandy clay with fine grained sand layers (up to 6" thick), reddish brown	
120					5YR 4.1			GC Glacial Till: gravelly clay, 20-40% rounded gravel, dark gray	

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.
Contractor: Prosonic
Geologist: PMK, North Jackson Co.
Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1465
Started: 8/2/2005
Total Depth (ft): 140
Completed: 8/2/2005
Easting (UTM): 432870.96
Northing (UTM): 5177812.73

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)		
130				GLEYS		moist	GC gravelly clay, 70-80% rounded to subrounded gravel and cobbles, bluish gray			
140							Bedrock, argillaceous siltstone, very fine grained, dark greenish gray			TD=140

**North
Jackson
Company**

Boring/Well Construction Report

Bore Hole: **QAL040**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1463

Started: 7/31/2005

Completed: 7/31/2005

Total Depth (ft): 108

Easting (UTM): 432877.78

Northing (UTM): 5177706.12

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
0					5YR 5.6		moist	SP Unsaturated Outwash: sand, poorly sorted, mostly fine-medium grained, mostly quartz sand, yellowish red	
10					5YR 6.4		moist	SP sand, poorly sorted, mostly fine-medium grained, trace gravel, coarsening downward, light reddish brown	
20					5YR 5.4		moist	SP sand, poorly sorted, mostly fine-medium grained, 5-10% gravel, reddish brown	
30								SP sand, poorly sorted, mostly fine-medium grained, fining downward to silty sand, light reddish brown	

Boring/Well Construction Report

Bore Hole: QAL040

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Surface Elevation (ft MSL): 1463

Contractor: Prosonic

Started: 7/31/2005

Total Depth (ft): 108

Geologist: DWW, North Jackson Co

Completed: 7/31/2005

Easting (UTM): 432877.78

Sampling method: Sonic 4" continuous core

Northing (UTM): 5177706.12

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
30									
40					SYR 6.4		moist		
50					SYR 5.4		moist-wet	SM sand, mostly very fine grained, some silt, reddish brown	
60					7.5YR 4.3		moist	SP-SM sand, mostly fine-medium grained, some silt, brown	

Boring/Well Construction Report

Bore Hole: **QAL040**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1463

Started: 7/31/2005

Total Depth (ft): 108

Completed: 7/31/2005

Easting (UTM): 432877.78

Northing (UTM): 5177706.12

Depth (ft)	Core Interval Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
60				7.5YR 4.3		moist	ML-CL Lacustrine Deposit: clayey silt to silty clay, brown	
				7.5YR 4.3		moist	SP-SM Unsaturated Outwash: sand, poorly sorted, mostly fine grained, some silt, brown	
70				5YR 6.4		moist	SM sandy silt, light reddish brown	
80				5YR 6.4		moist	SP-SM sand, poorly sorted, mostly fine grained, some silt, trace medium-coarse quartz sand, light reddish brown	
90							SM Saturated Outwash: silty sand, brown	

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1463

Started: 7/31/2005

Total Depth (ft): 108

Completed: 7/31/2005

Easting (UTM): 432877.78

Northing (UTM): 5177706.12

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
90				7.5YR 4/3		← saturated		
						←	GC	
				5YR 6/4		← saturated	Glacial Till: gravelly clayey sand, stiff, reddish brown	
100						←	Bedrock; argillaceous siltstone, very fine grained, dark greenish gray	
								TD=108

Boring/Well Construction Report

Bore Hole: **QAL041**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1463

Started: 7/29/2005

Total Depth (ft): 114

Completed: 7/29/2005

Easting (UTM): 432930.46

Northing (UTM): 5177637.78

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
0							SP Unsaturated Outwash sand, poorly graded, mostly fine-medium grained, loose, yellowish red	0-2: Cement
				5YR 5/8		moist		2-88 Cement-Bentonite Slurry
10				5YR 5/4		moist	SP sand, poorly graded, mostly fine-medium grained, trace gravel, loose, reddish brown	0-95 PVC Casing 2 inch diameter
20	EAG-1001505	grain size bag		5YR 6/4		moist	SP sand, poorly graded, mostly fine-medium grained, 5-10% coarse mafic grains, 5% gravel, loose, light reddish brown	

**North
Jackson
Company**

Boring/Well Construction Report

Bore Hole: **QAL041**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1463

Started: 7/29/2005

Total Depth (ft): 114

Completed: 7/29/2005

Easting (UTM): 432930.46

Northing (UTM): 5177637.78

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
30							SP-SM silty sand, light reddish brown	
		EAG-1001506	grain size bag	5YR 6/4		moist		
40							SP sand, poorly sorted, mostly fine grained, light reddish brown	
				5YR 6/4		moist		
50							ML Transitional Deposit: silt, medium stiff, non plastic, brown	
				7.5YR 4/3		moist		

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1463

Started: 7/29/2005

Total Depth (ft): 114

Completed: 7/29/2005

Easting (UTM): 432930.46

Northing (UTM): 5177637.78

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)	
60			EAG-1001507	grain size bag				SM-MI	sandy silt, reddish brown		
					5YR 5/4		moist				
					5YR 5/4		moist	ML	clayey silt, reddish brown		
70					5YR 5/4		moist				
					5YR 5/4		moist	SP	Unsaturated Outwash: sand, poorly sorted, mostly fine-medium grained, reddish brown		
80											

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1463

Started: 7/29/2005

Total Depth (ft): 114

Completed: 7/29/2005

Easting (UTM): 432930.46

Northing (UTM): 5177637.78

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
80			EAG-1001508	grain size bag	7.5YR 4/3		↑ wet ↓	SP sand, poorly sorted, mostly fine-medium grained with gravel and cobbles, brown	
					7.5YR 4/3		↑ wet ↓	SP sand, poorly sorted, mostly fine grained, brown	
90							↑ ↓	SP sand, poorly sorted, mostly fine grained, reddish brown	88-92.5: Bentonite
					5YR 5/4		↑ wet ↓	SP Saturated Outwash: sand, poorly sorted, mostly fine grained, reddish brown	92.5-105: Sand
100					7.5YR 4/3		↑ saturated ↓	SP sand, poorly sorted, mostly fine grained, loose, brown	95-105: PVC Screen, 2 inch diameter.
			EAG-1001509	grain size bag					105-107: Sand

**North
Jackson
Company**

Boring/Well Construction Report

Bore Hole: **QAL041**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1463

Started: 7/29/2005

Total Depth (ft): 114

Completed: 7/29/2005

Easting (UTM): 432930.46

Northing (UTM): 5177637.78

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)	
110					7.5YR 4/3		< saturated	GC	Glacial Till: gravelly clay, brown		107-114: Bentonite
									Bedrock, argillaceous siltstone, very fine grained, dark greenish gray		TD=114

**North
Jackson
Company**

Boring/Well Construction Report

Bore Hole: **QAL042**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM/DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1464

Started: 7/30/2005

Total Depth (ft): 128

Completed: 7/31/2005

Easting (UTM): 432977.43

Northing (UTM): 5177677.33

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)		
0					10YR 5.8			SP	Unsaturated Outwash: sand, poorly sorted, mostly fine grained, some organics, trace coarse sand, yellowish brown			
					7.5YR 5.4		slightly moist	SP	sand, poorly sorted, mostly fine grained, trace coarse sand, brown			
10								SP	sand, poorly sorted, mostly fine-medium grained, trace fine gravel, brown			
20					7.5YR 5.4		slightly moist					

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM/DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1464

Started: 7/30/2005

Total Depth (ft): 128

Completed: 7/31/2005

Easting (UTM): 432977.43

Northing (UTM): 5177677.33

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)		
30												
					7.5YR 5/4			SP	sand, poorly sorted, mostly fine grained, brown			
					7.5YR 5/4			SP-SM	silty sand, brown			
40								SP	sand, poorly sorted, mostly fine-medium grained, brown			
					7.5YR 5/4		slightly moist					
								SP-SM	sand, poorly sorted, mostly fine grained, some silt, reddish brown			
50					5YR 5/4			SP	sand, poorly sorted, mostly fine grained, reddish brown			

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM/DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1464

Started: 7/30/2005

Total Depth (ft): 128

Completed: 7/31/2005

Easting (UTM): 432977.43

Northing (UTM): 5177677.33

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
60					5YR 5/3		slightly moist		
70					5YR 5/3		wet	ML	Transitional Deposit: silt, reddish brown
					5YR 5/3		moist-wet	CL	Lacustrine Deposit: lean clay, low-moderate plasticity, brown with very fine red and light bluish gray laminations
80								SP	Unsaturated Outwash: sand, poorly sorted, mostly fine-medium grained with 10-20% gravel and cobbles, reddish brown

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: AJM/DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1464

Started: 7/30/2005

Total Depth (ft): 128

Completed: 7/31/2005

Easting (UTM): 432977.43

Northing (UTM): 5177677.33

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
80				5YR 5/3				
90							SP sand, poorly graded, mostly fine-medium grained, some silt, brown	
100				7.5YR 4/3			SP Saturated Outwash: sand, poorly graded, mostly fine- medium grained, some silt, brown	

Boring/Well Construction Report

Project: **Eagle**

Northings (UTM): 5177677.33

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1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Split-spoon with 4.25" ID HSA

Surface Elevation (ft MSL): 1422

Started: 7/26/2005

Total Depth (ft): 37

Completed: 7/27/2005

Easting (UTM): 431542.93

Northing (UTM): 5177588.97

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Auger Rig Installation)
0				5YR 4.4		moist	PT peat	0-2: Cement, 6 inch diameter borehole
							SM Unsaturated Outwash: silty sand, reddish brown	
							SM Transitional Deposit: silty sand, fining downwards, yellowish brown	
				10YR 5.4		saturated		2-29: Bentonite
							CL Lacustrine Deposit: silty lean clay, medium stiff, dark reddish gray	
10				5YR 4.2		saturated		0-30: PVC Casing, 2 inch diameter
							CL silty lean clay, soft, reddish brown with gray and red laminations (<1 mm)	
				5YR 5.4		saturated		
20								

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Split-spoon with 4 25" ID HSA

Surface Elevation (ft MSL): 1422

Started: 7/26/2005

Total Depth (ft): 37

Completed: 7/27/2005

Easting (UTM): 431542.93

Northing (UTM): 5177588.97

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Auger Rig Installation)	
20					5YR 3.4		↑ saturated ↓	SM	Transitional Deposit: silty sand with platy and angular mafic gravel, dark reddish brown		
									no recovery		
30					7.5YR 5.4		↑ saturated ↓	SP	Saturated Outwash: sand, poorly sorted, mostly fine-medium grained, brown with angular dark gray gravel, coarsening to gravelly sand		
					7.5YR 5.4		saturated	GC	Glacial Till: clayey gravel, brown		
									Auger refusal possible bedrock		
											29-35: Sand
											30-35: PVC Screen 2 inch diameter
											35-37: Sand
											TD=37

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1427

Started: 7/26/2005

Total Depth (ft): 57

Completed: 7/27/2005

Easting (UTM): 431587.25

Northing (UTM): 5177623.38

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description		Well Construction (Sonic Rig Installation)	
0				10YR 5.4- 5YR 5.4		dry	SP	Unsaturated Outwash: sand, poorly sorted, mostly fine- medium grained, yellowish brown to reddish brown		0-2: Cement, 6 inch diameter borehole 2-32.5 Bentonite
								no recovery		
				5YR 3.4		moist-wet	SM	Unsaturated Outwash: sandy silt, dark reddish brown		0-35: PVC Casing, 2 inch diameter
10										
				7.5YR 4.4		wet	CL	lacustrine Deposit: lean silty clay, soft, medium plasticity, brown		
20										

Owner: Kennecott Minerals Co

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1427

Started: 7/26/2005

Total Depth (ft): 57

Completed: 7/27/2005

Easting (UTM): 431587.25

Northing (UTM): 5177623.38

Depth (ft)	Core Intervals Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
30				7.5YR 4.4		wet	CH fat clay, high plasticity, very soft, brown	
				7.5YR 4.4		wet	CL sandy clay, brown with very fine gray laminations (2 mm thick)	
				7.5YR 4.4		wet	SP Saturated Outwash: sand, poorly graded, mostly fine- medium grained, with 5- 10% angular platy mafic gravel (slate, siltstone), brown	32.5-40: Sand
40				7.5YR 4.4		wet	SM Transitional Deposit: silty sand, brown	35-40: PVC Screen, 2 inch diameter
				5YR 4.4		wet	SC Glacial Till: clayey silty sand with gravel and cobbles, poorly sorted, reddish brown	40-42: Sand
50				5YR 4.4		wet	GC clayey gravel with cobbles, rounded to subrounded boulders, reddish brown	42-57: Bentonite

**North
Jackson
Company**

Boring/Well Construction Report

Bore Hole: **QAL044**

Project: **Eagle**

1004 Harbor Hills Drive, Suite 102 PO Box 218 Marquette, MI 49855 phone: 906.225.6787 fax: 906.225.6769

Owner: Kennecott Minerals Co.

Contractor: Prosonic

Geologist: DWW, North Jackson Co.

Sampling method: Sonic 4" continuous core

Surface Elevation (ft MSL): 1427

Started: 7/26/2005

Total Depth (ft): 57

Completed: 7/27/2005

Easting (UTM): 431587.25

Northing (UTM): 5177623.38

Depth (ft)	Core Intervals	Sample Location	Sample Number	Sample Type	Color	Blow Counts	Moisture Content	Lithologic Description	Well Construction (Sonic Rig Installation)
								Bedrock, argillaceous siltstone, very fine grained, dark greenish gray	 TD=57