

11206577

THE NINIGRET GROUP, L.C.

To be recorded with Salt Lake County
Recorder – Utah Code Ann § 57-25-108



When Recorded Return To:
Randolph G. Abood
Ninigret Technology East, L.C.
1700 South 4650 West
Salt Lake City, Utah 84104

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06/30/2011 03:57 PM \$76.00
Book - 9934 Pg - 2782-2815
GARY W. OTT
RECORDER, SALT LAKE COUNTY, UTAH
NINIGRET TECHNOLOGY EAST LC
1700 S 4650 W
SLC UT 84104
BY: ZJM, DEPUTY - WI 34 P.

and

Scott T. Anderson, Executive Secretary
Utah Solid and Hazardous Waste Control Board
P.O. Box 144880
Salt Lake City, UT 84114-4880

Tax Parcel No. 15-17-276-004 and 15-17-276-005

ENVIRONMENTAL COVENANT

This Environmental Covenant is entered into this 30th day of JUNE, 2011, by Ninigret Technology East, L.C. (“Ninigret Technology East” or “Owner”) and the Executive Secretary-Division of Solid and Hazardous Waste of the Utah Solid and Hazardous Waste Control Board (“Executive Secretary”), pursuant to Utah Code Ann. §§ 57-25-101 *et seq.* for the purpose of subjecting Solid Waste Management Unit (SWMU) No. 1, the former Pyrite Impoundment Area of the former Engelhard Corporation facility (“Property”), which is described in Paragraph 2, below, to the activity and use limitations set forth herein.

The Property was part of the former Engelhard Corporation facility that was located at approximately 2950 Andrew Avenue in Salt Lake City, Utah. The facility was constructed in the early 1950’s by Filtrol Corporation and was used to manufacture activated clay catalysts for the petroleum refining industry. By 1981, the facility had discontinued production of activated clay catalysts and had converted to production of fresh alumina catalyst and recycling of spent alumina catalysts. Engelhard Corporation acquired the facility in 1988 and continued the latter processes until the facility was closed in 2000. In 2002, Ninigret Technology East acquired the Property, as part of its acquisition of the entire Engelhard Corporation facility. All buildings and structures have since been removed and the facility and its waste-generating processes no longer exist. The Property is currently vacant and available for development. The Property and surrounding area is zoned for commercial and light industrial land uses.

The pyritic material in SWMU No. 1 originated as by-products of past catalyst manufacturing processes. Clay slurries containing sulfates of iron and other metals, silicates and

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low-pH water were periodically deposited at SWMU No. 1 from approximately 1951 to 1975. The deposited material eventually formed a dry surface impoundment, which was bounded by berms along the eastern and southern boundaries of the SWMU. The material reportedly reached a maximum thickness of approximately twelve (12) feet above the original ground surface. From these boundary berms, the accumulated pyrite extended on the surface several hundred feet to the north and west, where the thickness completely dissipated.

Investigations into environmental releases have been conducted throughout the facility since the late 1980's. A summary of the investigations conducted prior to 2006 is referenced in the RCRA Facility Investigation Report prepared by Ninigret Technology East in 2006. The first investigation of the pyrite impoundment area began in 1990. Over a three year period, samples were collected of the pyritic material, of the berm and of groundwater. Samples were analyzed for total metals and metals by the toxicity characteristic leachate procedure (TCLP). The pyritic material was further investigated in 2001 and 2002 under an approved Sampling and Analysis and an Addendum to the Sampling and Analysis Plan. A small percentage of the pyrite waste samples collected within the southeastern portion of the pyrite impoundment exhibited the hazardous waste characteristics of corrosivity (pH<2) and/or toxicity (TCLP - lead >5 mg/l). Based on these results, a portion of the pyrite material was designated as "restricted" with respect to removal or recycling, while the remainder of the pyrite material (the "unrestricted pyrite") was approved for offsite removal or recycling.

A portion of the unrestricted pyrite material was removed and recycled between 2001 and 2003. The remaining unrestricted pyrite material was later excavated and stockpiled in the western portion of SWMU No. 1. In late 2004, Ninigret Technology East moved the entire volume of the restricted pyrite material within the SWMU No 1 boundaries to allow for installation of road infrastructure. Ninigret Technology East stockpiled the restricted pyrite material on a constructed liner in the eastern portion of SWMU No.1. Both the restricted and unrestricted pyrite piles include some native soil material, which was scraped from beneath the original location of the respective pyrite materials. Excavation stopped when the hardpan was encountered and the area was then backfilled with clean imported fill material.

The area of the restricted pyrite stockpile previously extended to within the boundaries of the former plant site. In order to complete the sale of the former plant site in late 2008, Ninigret Technology East moved the restricted pyrite material back to the west side of SWMU No. 1. The residual soil on the east side of SWMU No. 1 was then investigated and two soil removal actions were performed where indicated by the analytical data. Following the removal actions, Ninigret Technology East evaluated the remaining site soil in a risk assessment memorandum and then included that area under the umbrella of the Site Management Plan for the Plant Site Area. All of the SWMU No. 1 materials, which are subject to the requirements of the Site Management Plan for SWMU No. 1 (former Pyrite Impoundment Area), are currently located either within Lots 16 and 17 of the Nin Tech East VII plat or beneath the adjoining segment of Gladiola Street, and a small amount of the SWMU 1 materials may also remain beneath a lift station near the southeast corner of Lot 16. A portion of the unrestricted pyrite material has since been re-distributed west of the original SWMU boundary but within the boundaries of Lots 16

and 17, and therefore unrestricted pyrite material may be located anywhere within Lots 16 and 17. A plat map depicting the affected area including Lots 16 and 17 is provided in Exhibit A along with a legal description.

The most recent SWMU No. 1 investigation was conducted in 2009 under an approved work plan. As part of the investigation, Ninigret Technology East sampled each feature of SWMU No. 1 (*i.e.*, pyritic material (both restricted and unrestricted), the berm pile, subsurface soil underlying the unrestricted pyrite materials, areas of elevated concentrations near the unrestricted pyrite, groundwater and the adjacent Lee Drain to provide analytical data representative of current site conditions. Current analytical data takes into account the movement and disturbance of the pyrite and soil materials that have occurred since the original investigation and testing and serves as the current chemical baseline for the property.

In connection with the closure process, the analytical data resulting from the 2009 investigation of SWMU No. 1 were used to prepare a baseline risk assessment, which was completed in 2010, to evaluate human health and ecological risks. The baseline risk assessment was conducted in accordance with the requirements of Utah Administrative Code Rule 315-101-1 *et seq.* and consistent with the United States Environmental Protection Agency risk assessment guidance. The baseline risk assessment evaluated both human health and ecological risks associated with residual soil and groundwater contamination on and beneath the Property and surface water and sediment in the nearby Lee Drain (a canal along the southern boundary of the Property). Three endpoints were calculated for the human health risk assessment: (i) the potential for people to develop cancer, (ii) the potential for health effects to occur other than cancer, and (iii) the potential for elevated blood lead levels. Exposure pathways for the site worker and construction worker included incidental ingestion of soil, dermal contact with soil and inhalation of dust within SWMU No. 1. Groundwater exposure pathways for a construction worker included incidental ingestion of groundwater and dermal contact. For a teenage wader in Lee Drain, exposure pathways included incidental ingestion and dermal contact with surface water and sediment.

The baseline risk assessment identified constituents of concern (metals) remaining at the site. The concentrations of metals constituents remaining in various media at the site are detailed in Tables 2-1 through 2-9 of the risk assessment (Glaser, Steven L. Environmental Consulting, 2010 - *Baseline Risk Assessment for the Pyrite Impoundment Area, Solid Waste Management Unit 1, Former Engelhard Facility, Salt Lake City, Utah*) which is on file with the Utah Department of Environmental Quality, Division of Solid & Hazardous Waste.

Risks were calculated for a site-wide construction worker and construction worker exposed to both unrestricted pyrite material and subsurface beneath this material. Based on the results of the baseline risk assessment, corrective action is required only for the restricted pyrite material. The restricted pyrite exceeded the UAC R315-101 criteria for the potential cancer risk, non-cancer risk and blood lead level. For the restricted pyrite, both the potential cancer and non-cancer risk for a site worker and the potential non-cancer risk for a construction worker exceeded the criteria. In addition, the potential blood lead level for the fetus of a pregnant female worker was exceeded for a site worker and a construction worker. For all other features and receptors at

SWMU No.1, the potential cancer, non-cancer and blood lead level risks were less than the UAC R315-101 criteria.

In addition, based on the results of the ecological risk assessment and assuming the Property were to remain undeveloped, there appears to be limited potential for effects to ecological receptors due to contaminants on the Property, in the absence of any controls to prevent the establishment of habitat over time. However, the future land use for the Property includes large-scale redevelopment that will effectively displace the already limited habitat and further reduce the potential for such effects. The baseline risk assessment and ecological risk assessment was approved by the Executive Secretary in October 2010.

Because the calculated potential cancer, non-cancer and blood lead levels associated with the restricted pyrite material exceeded the UAC R315-101 criteria, corrective action is required for this material. Since none of the other media exceeded the UAC R315-101 criteria, corrective action is only required for the restricted pyrite material and is not required for any other medium or material at the Property.

Corrective action for the restricted material has been completed. Corrective action consisted of removal of this material for offsite disposal as non-hazardous solid waste at an appropriately permitted disposal facility. Because residual contaminants will remain at concentrations higher than background levels UAC R315-101-6 requires a Site Management Plan for the Property to achieve a risked-based closure. As part of the Site Management Plan, Ninigret Technology East and the Executive Secretary have agreed that Ninigret Technology East will record an Environmental Covenant, approved by the Executive Secretary, that imposes certain activity and use limitations on the Property. The administrative record for the Property is maintained and managed by the Executive Secretary.

AGREEMENT

Now therefore, Ninigret Technology East, L.C. and the Executive Secretary agree to the following:

1. Environmental Covenant. This instrument is an Environmental Covenant developed and executed pursuant to Utah Code Ann. §§ 57-25-101 *et seq.*
2. Property. This Environmental Covenant concerns SWMU No. 1, the former Pyrite Impoundment Area at the former Engelhard Corporation facility (Tax Parcel Numbers 15-17-276-004 and 15-17-276-005), owned by Ninigret Technology East, L.C., located at 2950 Andrew Avenue, Salt Lake City, Utah, in Salt Lake County, Utah, as depicted in Exhibit A attached hereto and by this reference hereby incorporated herein ("Property").
3. Owner. The owner of the Property is Ninigret Technology East, L.C. ("Owner"), whose business address is at 1700 South 4650 West, Salt Lake City, 84101. Consistent with Paragraph 7 herein, the obligations of Owner are imposed on assigns and successors in interest,

including any future owner of any interest in the Property or any portion thereof, including, but not limited to, owners of an interest in fee simple, mortgagees, easement holders, and/or lessees ("Transferee").

4. Holder. Owner, whose address is listed above, is the holder of this Environmental Covenant, as defined in Utah Code Ann. § 57-25-102(6). The Holder agrees to enforce the activity and use limitations herein.

5. Activity and Use Limitations. The Executive Secretary has determined that land use limitations are necessary for the Property in order to notify any Transferee who has any interest in the Property or any portion of the Property that the Property is subject to the Site Management Plan, to minimize human exposure to any residual contaminants, to prevent future residential use of the Property and to assure that any future owners of the Property or any portion of the Property will implement, administer and maintain all activity and use limitations concerning the Property. A copy of the Site Management Plan is attached hereto as Exhibit B and by this reference hereby incorporated herein. Accordingly, Owner agrees to implement, administer and maintain, and, in the event that it conveys or transfers an interest in the Property to another party, to take the following measures to ensure that such party implements, administers and maintains, the following activity and use limitations as they pertain to the Property: As part of the Site Management Plan, Owner hereby imposes and agrees to comply with the following activity and use limitations:

5.1 All activities conducted by Owner, or any Transferee, under the Site Management Plan shall be subject to inspection and enforcement by the Utah Solid and Hazardous Waste Control Board in accordance with the provisions in the Utah Solid and Hazardous Waste Act, §§ 19-6-101 *et seq.*, Utah Code Ann., as amended.

5.2 Owner, or any Transferee, shall provide the Executive Secretary and its representatives and its authorized contractors with access at all reasonable times to the Property for the purpose of ensuring that Owner, or any Transferee, complies with the requirements of the Site Management Plan.

5.3 Owner, or any Transferee, as appropriate, shall comply with the following site management requirements applicable to the Property:

5.3.1 Owner, or any Transferee, shall not use, or allow others to use, the Property for residential development (and other sensitive uses, including child care facilities and early education schools) and ensure that the Property is used solely for commercial and industrial purposes in the future. In addition, the Property shall not be used to grow edible crops without the approval of the Executive Secretary.

5.3.2 Until redevelopment occurs, Owner, or any Transferee, shall manage the Property (including the entirety of Lots 16 and 17) to minimize the establishment of new habitat in areas where the unrestricted pyrite is located to reduce further the limited potential for ecological effects from remaining contaminants on the Property. This will be accomplished

by mowing or soil grubbing as needed to prevent significant re-vegetation from colonization by weedy plant species, which may otherwise occur over time in the absence of such controls.

5.3.3 No portion of any future surface waterway (such as re-routing of segments of the Brighton Canal, Lee Drain or similar features) shall be placed within Lots 16 and 17 or elsewhere within the footprint of SWMU 1, unless the waterway is lined or otherwise constructed such that a separation is maintained between the water within the waterway and soils within Lots 16 and 17 or elsewhere within the footprint of SWMU 1 that contains metals concentrations above background levels. The integrity of this separation shall be maintained at all times.

5.3.4 Construction of groundwater wells for purposes of development and use of ground water is not permitted on the Property, except for investigation or remediation thereof. In addition, Owner, or any Transferee, as appropriate, shall implement a separate groundwater monitoring program to monitor concentrations of chemicals in groundwater beneath the Property. The restriction on groundwater use may be modified or eased if the Executive Secretary determines that it is appropriate based on groundwater analytical results.

5.3.5 Owner, or any Transferee, shall notify any commercial workers of existing environmental conditions on the Property and procedures to minimize exposure to and potential risks associated with such existing environmental conditions, if such commercial workers occupy a portion of the Property before the entire Property is fully developed with buildings, paved surface and parking areas and landscaped areas. In addition, Owner, or any Transferee, shall notify any construction workers involved in excavation activities on the Property, who might become exposed to residual soil or groundwater contamination beneath the Property, of existing environmental conditions and procedures to minimize exposure to and potential risks associated with such existing environmental conditions.

5.3.6 Owner, or any Transferee, as appropriate, shall ensure that all excavated material from the Property either remains on the Property or is disposed of at an appropriately licensed treatment, storage and disposal facility, unless such materials are determined through sampling and laboratory analysis, and affirmed by the Executive Secretary, not to contain constituent concentrations above background concentrations.

5.3.7 The Site Management Plan shall not be amended without the written approval of the Executive Secretary, which consent shall not be unreasonably withheld.

5.3.8 Owner, or any Transferee, shall impose each of the limitations set forth in this Environmental Covenant on its successors in any deed or transfer of interest in the Property, or any portion of the Property, which limitations are intended to run with the Property and bind successors to the Property in perpetuity, unless the Executive Secretary or its successors determine that such requirements can be reduced or eliminated in the future.

6. Breach of Limitations. If any event or action by or on behalf of a person or entity who owns an interest in or holds an encumbrance on the Property, identified in Paragraph 11

below, constitutes a breach of the activity and use limitations, Owner, or any Transferee, shall orally notify the Executive Secretary within five (5) days and in writing within twenty five (25) days of becoming aware of the event or action, and shall remedy the breach of the activity and use limitations within sixty (60) days of becoming aware of the event or action, or such other time frame as may be agreed to by Owner, or any Transferee, and the Executive Secretary.

7. Running with the Land. This Environmental Covenant shall be binding upon Owner and all assigns and successors in interest, including any Transferee, and shall run with the land, pursuant to Utah Code Ann. § 57-25-105, subject to amendment or termination as set forth herein.

8. Compliance Enforcement. Compliance with this Environmental Covenant may be enforced pursuant to Utah Code Ann. § 57-25-111. Failure to timely enforce compliance with this Environmental Covenant or the activity and use limitations contained herein by any party shall not bar subsequent enforcement by such party and shall not be deemed a waiver of the party's right to take action to enforce any non-compliance. Nothing in this Environmental Covenant shall restrict the Executive Secretary from exercising any authority under applicable law.

9. Rights of Access. Owner, or any Transferee, hereby grants to the Executive Secretary, its agents, contractors, and employees the right of access to the Property for implementation or enforcement of this Environmental Covenant.

10. Compliance Reporting. Upon request, Owner, or any Transferee, shall submit to the Executive Secretary written documentation verifying that the activity and use limitations remain in place and are being complied with.

11. Notice upon Conveyance. Each instrument hereafter conveying any interest in the Property or any portion of the Property shall contain a notice of the activity and use limitations set forth in this Environmental Covenant, and provide the recorded location of this Environmental Covenant. The notice shall be substantially in the following form:

THE INTEREST CONVEYED HEREBY IS SUBJECT TO AN ENVIRONMENTAL COVENANT, DATED _____, 2011. RECORDED IN THE DEED OR OFFICIAL RECORDS OF THE SALT LAKE COUNTY RECORDER ON _____, 2010, IN [DOCUMENT _____, or BOOK _____, PAGE _____]. THE ENVIRONMENTAL COVENANT CONTAINS THE FOLLOWING ACTIVITY AND USE LIMITATIONS:

THE LANGUAGE OF PARAGRAPH NO. 5 OF THIS ENVIRONMENTAL COVENANT, ACTIVITY AND USE LIMITATIONS, IS INCORPORATED HEREIN VERBATIM BY REFERENCE.

12. Owner, or any Transferee, shall notify the Executive Secretary within twenty (20) days after each conveyance of an interest in any portion of the Property. Notice by Owner, or

any Transferee, shall include the name, address and telephone number of the grantee, a copy of the deed or other documentation evidencing the conveyance, and an unsurveyed plat that shows the boundaries of the property being transferred.

13. Representations and Warranties. Owner hereby represents and warrants to the other signatories hereto:

13.1 that Owner is the sole owner of the Property;

13.2 that Owner holds fee simple title to the Property, which is free, clear and unencumbered;

13.3 that Owner has the power and authority to enter into this Environmental Covenant, to grant the rights and interests herein provided and to carry out all obligations hereunder;

13.4 that Owner has identified all other persons that own an interest in or hold an encumbrance on the Property and notified such persons of Owner's intention to enter into this Environmental Covenant; and

13.5 that this Environmental Covenant will not materially violate or contravene or constitute a material default under any other agreement, document or instrument to which Owner is a party or by which Owner may be bound or affected.

14. Amendment or Termination. This Environmental Covenant may be amended or terminated by written consent of all of the following: Owner, or any Transferee, and the Executive Secretary, pursuant to Utah Code Ann. § 57-25-110 and other applicable law. The term, "Amendment," as used in this Environmental Covenant, shall mean any changes to the Environmental Covenant, including the activity and use limitations set forth herein, or the elimination of one or more activity and use limitations when there is at least one limitation remaining. The term, "Termination," as used in this Environmental Covenant, shall mean the elimination of all activity and use limitations set forth herein and all other obligations under this Environmental Covenant.

15. Severability. If any provision of this Environmental Covenant is found to be unenforceable in any respect, the validity, legality, and enforceability of the remaining provisions shall not in any way be affected or impaired.

16. Governing Law. This Environmental Covenant shall be governed by and interpreted in accordance with the laws of the State of Utah.

17. Recordation. Within thirty (30) days after the date of the final required signature upon this Environmental Covenant, Owner shall file this Environmental Covenant for recording, in the same manner as a deed to the Property, with the Salt Lake County Recorder's Office.

18. Effective Date. The effective date of this Environmental Covenant shall be the date upon which the fully executed Environmental Covenant has been recorded as a document of record for the Property with the Salt Lake County Recorder.

19. Distribution of Environmental Covenant. Owner shall distribute a file- and date-stamped copy of the recorded Environmental Covenant to: the Executive Secretary and any other person designated by the Executive Secretary, pursuant to Utah Code Ann. §§ 57-25-107.

20. Notice. Unless otherwise notified in writing by or on behalf of the current owner or the Executive Secretary, any document or communication required by this Environmental Covenant shall be submitted to:

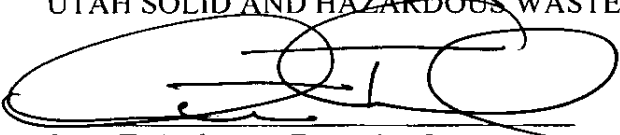
Owner:

Randolph G. Abood
Ninigret Technology East, L.C.
1700 South 4650 West
Salt Lake City, Utah 84104

Utah Solid and Hazardous Waste Control Board:
Scott T. Anderson, Executive Secretary
Utah Solid and Hazardous Waste Control Board
P.O. Box 144880
Salt Lake City, Utah 84114-4880

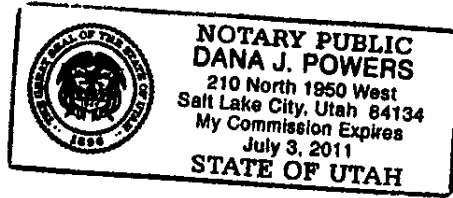
21. Execution. The undersigned representative of Owner represents and certifies that he is authorized to execute this Environmental Covenant.

UTAH SOLID AND HAZARDOUS WASTE CONTROL BOARD



Scott T. Anderson, Executive Secretary

State of Utah)
)
County of Salt Lake) ss:



Before me, a notary public, in and for said county and state, personally appeared Scott T. Anderson, Executive Secretary of the Utah Solid and Hazardous Waste Control Board, who acknowledged to me that he did execute the foregoing instrument.

IN TESTIMONY WHEREOF, I have subscribed my name and affixed my official seal this 30 day of June, 2010 ~~2010~~ 2011

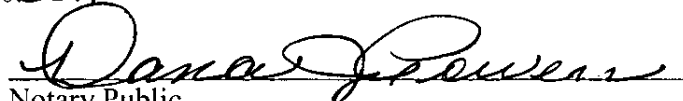

Notary Public

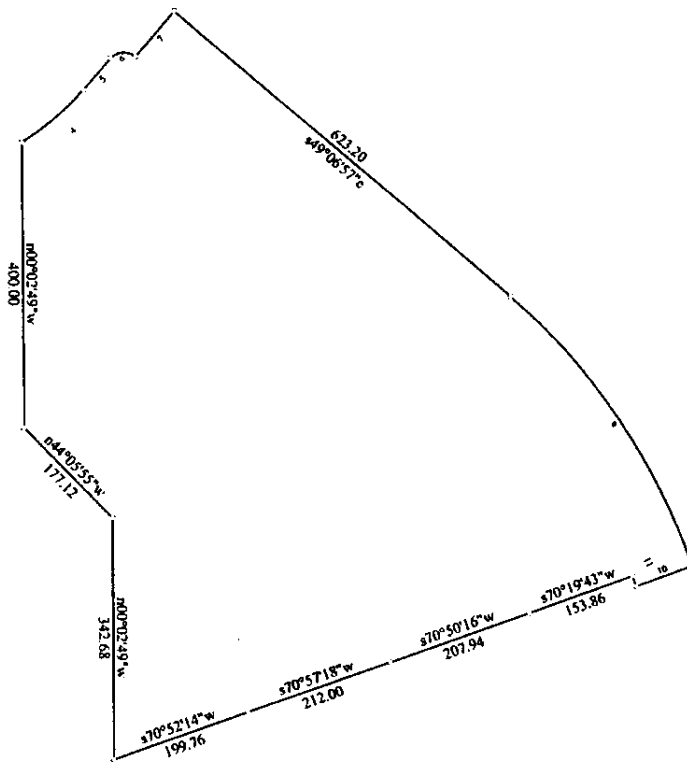
EXHIBIT A
To
ENVIRONMENTAL COVENANT

[Property Description]

A parcel of land including all of Lot 16 and 17, Nin Tech East VII and Lot C, Nin Tech East III and also the adjacent area of Gladiola Street in the Northeast Quarter of Section 17, Township 1 South, Range 1 West, Salt Lake Base and Meridian, Salt Lake County, Salt Lake City, Utah, more particularly described as follows:

BEGINNING at the Southwest corner of said Lot 16, which is 1664.23 feet South 89° 54'29" West along the Section line and 2245.64 feet South 00°05'34" East from the North Quarter corner of said Section 17, and running thence North 00°02'49" West 342.68 feet to the northeast corner of said Lot 16; thence North 44°05'55" West 177.12 feet along said Lot 17; thence North 00°02'49" West 400.00 feet along said Lot 17 to a point on a 383.00 foot radius curve to the left and Ninigret Drive; thence Northeasterly 114.67 feet along the arc of said curve through a central angle of 17°09'17" (chord bears North 49°27'42" East 114.24 feet) along said street; thence North 40°53'03" East 58.57 feet along said street to a point of curvature with a 25.00 foot radius curve to the right; thence Easterly 39.27 feet along the arc of said curve through a central angle of 90°00'00" (chord bears North 85° 53'03" East 35.36 feet); thence North 40°53'03" East 84.00 feet to the northeasterly boundary line of Gladiola Street; thence South 49°06'57" East 623.20 feet along said street to a point of curvature with a 852.00 foot radius curve to the right; thence Southeasterly 459.80 feet along said street and the arc of said curve through a central angle of 30° 55'15" (chord bears South 33°39'19" East 454.24 feet); thence South 70°17'04" West 84.04 feet to the southwesterly boundary of said street and a point on a 768.00 foot radius curve to the left; thence Northwesterly 15.39 feet along the arc of said curve through a central angle of 01°08'54" (chord bears North 18° 36'10" West 15.39 feet); thence South 70°19'43" West 153.86 feet; thence South 70°50'16" West 207.94 feet; thence South 70°57'18" West 212.00 feet; thence South 70°52'14" West 199.76 feet to the POINT OF BEGINNING.

Contains 13.036 acres



Title: FORMER PYRITE AREA - DESCRIPTION		Date: 03-31-2011
Scale: 1 inch = 200 feet	File:	
Tract 1: 13.036 Acres: 567844 Sq Feet: Closure = n84.1044e 0.01 Feet: Precision = 1/285975: Perimeter = 3172 Feet		
001=n00.0249w 342.68	007=n40.5303e 84.00	013=s70.5016w 207.94
002=n44.0555w 177.12	008=s49.0657e 623.20	014=s70.5718w 212.00
003=n00.0249w 400.00	009: R, R=852.00, Delta=30.5515	015=s70.5214w 199.76
004: L, R=383.00, Delta=17.0917 Bng=N49.2742E	010=s70.1704w 84.04	
005=n40.5303e 58.57	011: L, R=768.00, Delta=01.0854 Bng=N18.3610W	
006: R, R=25.00, Delta=90.0000	012=s70.1943w 153.86	

EXHIBIT B
To
ENVIRONMENTAL COVENANT

[Attached Copy of Approved Site Management Plan]

Site Management Plan for the Former Pyrite Impoundment Area

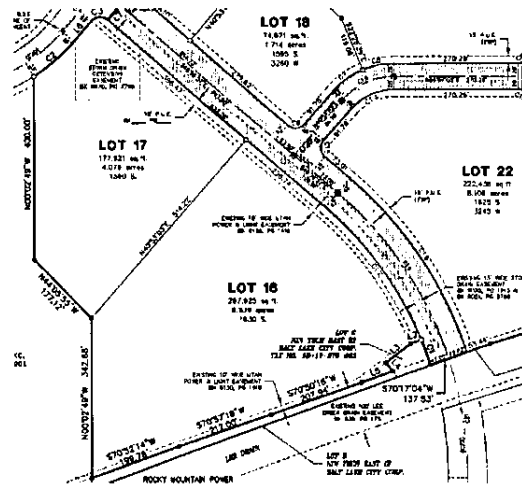
Former Engelhard Facility

Salt Lake City, Utah

UTD009073800

April 27, 2011

Terracon Project No. 61087229



Prepared for:

Ninigret Technology Park, L.C.
1700 South 4650 West
Salt Lake City, Utah 84101

Prepared by:

Terracon Consultants, Inc
14850 South Pony Express Road, Suite 150N
Bluffdale, Utah 84065

Offices Nationwide
Employee-Owned

Established in 1965
terracon.com

Terracon

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities



April 27, 2011

Utah Department of Environmental Quality
Division of Solid & Hazardous Waste
PO Box 144880
Salt Lake City, Utah 84114-4880

Attn: James P. Lansbarkis, Environmental Health Scientist
T: (801) 538-6815
F: (801) 538-6875

Re: **Site Management Plan
Former Pyrite Impoundment Area
Former Engelhard Facility
Salt Lake City, Utah
UTD009073800
Terracon Project No. 61087229**

Mr. Lansbarkis:

On behalf of our client, Ninigret Technology East, L.C., please find enclosed two copies of the Site Management Plan (SMP) for the former pyrite impoundment area. The SMP prescribes site management actions following corrective action based on the approved risk assessment, and includes an environmental covenant to enforce the site management requirements under this SMP.

We appreciate your review of this SMP. If you should have any questions or need additional information, please contact Gary McEntee at (914) 438-0649 or me at (801) 545-8500.

Sincerely,
Terracon Consultants, Inc.

Andy King, P.G.
Senior Project Manager - Environmental

David E. Koch, Senior Consultant
Authorized Project Reviewer

ARK/DEK/ab
Copies to: Addressee (3)
Gary McEntee, Ninigret (1), Hal Pos, Parsons Behle & Latimer (1)

Attachments
N:\Projects\2008\61087229\Task 003 Plant Site\pyrite SMP\update 030311\draft pyrite SMP 2011.docx

Terracon Consultants, Inc. 14850 South Pony Express Road, Suite 150N Bluffdale, Utah 84065
P [801] 545 8500 F [801] 545 8600 terracon.com

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities

BK 9934 PG 2797

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APPENDIX A	Former Pyrite Impoundment Area Map and Legal Description
APPENDIX B	Environmental Covenant

SITE MANAGEMENT PLAN FOR THE FORMER PYRITE IMPOUNDMENT AREA

FORMER ENGELHARD FACILITY SALT LAKE CITY, UTAH

**Terracon Project No. 61087229
April 27, 2011**

1.0 INTRODUCTION

1.1 Scope

This Site Management Plan (SMP) describes site management actions for Solid Waste Management Unit (SWMU) #1, the former Pyrite Impoundment Area (the site) of the former Engelhard facility (the Facility). This SMP is pursuant to the Utah Solid and Hazardous Waste Control Board's Stipulation and Consent Agreement # 92060130 that governs corrective action at the site. Three other portions of the Facility are also subject to site management actions as described in SMPs for the respective areas (MSE, 2004a and 2004b; Terracon, 2008).

This SMP is based on the results of a baseline risk assessment (Glaser, 2010) submitted to the Utah Department of Environmental Quality, Division of Solid & Hazardous Waste (DSHW) in accordance with the requirements at Utah Administrative Code (UAC) R315-101. The rules at R315-101 establish standards to support risk-based cleanup and closure at sites for which remediation or removal of constituents to background levels will not be achieved. Preliminary screening-level risk estimates previously indicated that the level of site risk may exceed 1×10^{-6} for carcinogens or a Hazard Index of one for non-carcinogens based on a residential exposure scenario. However, the actual and future land use conditions do not include residential land use. The Glaser baseline risk assessment was conducted in accordance with Utah Administrative Code (UAC) R315-101-5.2 (b)(2) for actual and future land use conditions, based on site-specific physical and chemical information and the assumption that the affected media will not have undergone any remediation or controls to reduce exposure.

The site is in an area zoned for commercial/industrial (M-1, light manufacturing; Salt Lake City, 2010) land use, and the actual land use planned for redevelopment of the site is commercial/light industrial. The planned redevelopment eliminates exposure pathways to future onsite commercial workers due to placement of buildings, paved parking areas, and landscaped areas that will prevent contact with near-surface and subsurface constituents. The site is not, and will not be, used for residential land use.

Because constituents at this site will remain at concentrations higher than background levels, UAC R-315-101-6 requires a Site Management Plan and provides three options for the SMP. These SMP options are summarized as follows:

- 1) The SMP may contain a no further action option only if the level of human health risk present at the site is below 1×10^{-6} for carcinogens and a hazard index (HI) is not "greater than one" for non-carcinogens based on a residential exposure scenario, and if ecological effects are insignificant.
- 2) The SMP must contain appropriate management activities e.g., monitoring, deed notations, site security, or post-closure care, if the level of human health risk present at the site is less than 1×10^{-4} for a risk assessment based on actual land use conditions, but greater than 1×10^{-6} for a risk assessment based on a residential exposure scenario, and the HI is not "greater than one" using both exposure scenarios, or if ecological effects may be significant. In this case the SMP may, but is not required to, include corrective action.
- 3) The SMP must contain procedures for corrective action if the level of human health risk present at the site is greater than 1×10^{-4} for carcinogens, or an HI is "greater than one" for non-carcinogens, for a risk assessment based on the actual land use, or if corrective action is required to mitigate ecological effects.

The results of the human health risk assessment indicated that for most affected media at the site, the level of human health risk is less than 1×10^{-4} for carcinogens and the Hazard Index is not "greater than one" for non-carcinogens for future onsite commercial workers and construction workers. However, for one affected medium (the "restricted pyrite"), the carcinogenic health risk was calculated to exceed 1×10^{-4} for onsite commercial workers and the Hazard Index was "greater than one" for future onsite commercial workers and construction workers. The results of the ecological risk assessment indicated a limited potential for effects to ecological receptors due to constituents associated with SWMU 1, assuming that the site remains undeveloped.

Therefore, based on the results of the risk assessment, an SMP is required for this site and it must include appropriate management actions, although it is not required to include corrective action except for one affected medium (the restricted pyrite). The required site management actions and corrective action are detailed in Section 4.0 of this SMP.

1.2 Site Background

The site was part of the former Facility which was located at approximately 2950 West Andrew Avenue in Salt Lake City, Utah. The former Facility began operations in 1951 under the ownership of the Filtrol Corporation; Engelhard Corporation acquired the Facility in 1988 and continued operations until 2000. During its period of operation from 1951 to 2000, the Facility manufactured catalysts for the petroleum refining industry. These included clay and metal-impregnated alumina catalysts that stripped unwanted sulfur compounds from petroleum during petroleum refining processes. In addition, the plant received spent catalyst material from which it regenerated new catalysts. The Facility was closed in 2000, all buildings and structures have since been removed, and the former operations and its waste-generating processes no longer

exist. The site is currently vacant and is an underutilized "Brownfield" property. The property and surrounding area is zoned for commercial/light industrial land uses, and in recent years has experienced an increased pace in development for these uses. In 2001, Ninigret Technology ("Ninigret", a land developer) acquired the property.

The pyritic material of SWMU 1 originated as by-products of past catalyst manufacturing processes. Clay slurries containing sulfates of iron and other metals, silicates, and low-pH water were periodically deposited at SWMU 1 from approximately 1951 to 1975. The deposited material eventually formed a dry surface impoundment, which was bounded by berms along the eastern and southern boundaries of the SWMU. The material reportedly reached a maximum thickness of approximately 12 feet above the original ground surface. From these boundary berms, the accumulated pyrite extended on the surface several hundred feet to the north and west, where its thickness decreased to zero.

Investigations into environmental releases have been conducted throughout the former Facility since the late 1980s. A summary of the investigations conducted prior to 2006 is referenced in the RCRA Facility Investigation Report (MSE, 2006).

The first investigation of the Pyrite Impoundment Area began in 1990 (Montgomery Watson, 1994). Over a three year period, samples were collected of the pyritic material, of the berm, and of groundwater. Samples were analyzed for total metals and for metals by the toxicity characteristic leaching procedure (TCLP). The pyrite material was further investigated in 2001 and 2002 under an approved Sampling and Analysis Plan (SAP) and an Addendum to the SAP (MSE, 2001a and 2001b). A small percentage of pyrite waste samples collected within the southeastern portion of the pyrite impoundment exhibited the hazardous waste characteristics of corrosivity (pH<2) and/or toxicity (TCLP-lead >5 mg/l). Based on these results, a portion of the pyrite material was designated as "restricted" with respect to removal for recycling, while the remainder of the pyrite material (the "unrestricted pyrite") was released for a removal/recycling effort.

A portion of the unrestricted pyrite material was removed and recycled between 2001 and 2003. The remaining unrestricted pyrite was later excavated and stockpiled in the western portion of SWMU 1. In late 2004, the entire volume of the restricted pyrite material was moved within the SWMU boundaries to allow for installation of infrastructure. The restricted pyrite was stockpiled on a constructed liner in the eastern portion of SWMU 1. The restricted and unrestricted pyrite piles each include some native soil material, which was scraped from beneath the original location of the respective pyrite materials. Excavation stopped when a hardpan was encountered, and the area was backfilled with clean imported fill material.

The area of the restricted pyrite stockpile previously extended to within the boundaries of the former Plant Site. In order to complete the sale of the former Plant Site in late 2008, the restricted pyrite was moved back to the west side of SWMU 1. The residual soil on the east side of the SWMU was then investigated, and two soil removals were performed where

indicated by the data. Following the removal actions, the remaining site soil was evaluated in a risk assessment memorandum (Glaser, 2008b), and that area was then brought under the umbrella of the Site Management Plan for the Plant Site area (Terracon, 2008). At this time, all of the SWMU 1 materials, which are subject to the requirements of this SMP, are located either within Lots 16 and 17 of the Nin Tech East VII plat, or beneath the adjoining segment of Gladiola Street, and a small amount of the SWMU 1 materials may also remain beneath a lift station near the southeast corner of Lot 16. A plat map depicting the affected area including Lots 16 and 17 is provided in Appendix A.

The most recent SWMU 1 investigation was conducted in 2009 under an approved workplan (Terracon, 2009a and 2009b). Each feature of SWMU 1 [e.g., pyritic material (both restricted and unrestricted)], the berm pile, subsurface soil underlying the unrestricted pyrite material, areas of elevated concentrations near the unrestricted pyrite, groundwater, and the adjacent Lee Drain was sampled to provide data representative of current conditions. Current data takes into account the movement and disturbance of pyrite and soil that had occurred since the original explorations and testing and acts as the current chemical baseline.

The data resulting from the 2009 SWMU 1 investigation were used in a baseline risk assessment, which was completed in 2010 to evaluate human health and ecological risks (Glaser, 2010).

2.0 REMAINING CONSTITUENTS

Metals remain in the pyrite materials and in soils and groundwater beneath the site at concentrations exceeding local background levels. However, as discussed below in Section 3, the baseline risk assessment has determined that for most areas and media within the site, the level of health risk to future workers is within the limits established at UAC R315-101 for current and future land use, assuming no controls to minimize exposure. However, for one medium at the site (the restricted pyrite), the human health risk limits at UAC R315-101 are exceeded, and therefore site management actions must include corrective action for this material. The baseline risk assessment also indicated a limited potential for effects to ecological receptors due to site constituents, assuming the site were to remain undeveloped. However, the future land use includes large-scale redevelopment, which will effectively remove the already-limited habitat and further reduce the potential for such effects.

3.0 SITE RISK

This section summarizes the results of the baseline risk assessment. Details of the risk assessment procedures and results are provided in the *Baseline Risk Assessment for the Pyrite Impoundment Area, Solid Waste Management Unit 1, Former Engelhard Facility, Salt Lake City, Utah* (Glaser, Steven L. Environmental Consulting, September 2010).

3.1 Human Health Risk

Three endpoints were calculated for the human health risk assessment (HHRA): the potential for people to develop cancer, the potential for health effects to occur other than cancer, and the potential for elevated blood-lead levels. If exposure to site constituents could result in greater than a one in ten thousand (1×10^{-4}) chance of developing cancer, then corrective action is required as part of the SMP. The potential for non-cancer effects was evaluated with a hazard index (HI), which compares the amount of exposure that could occur to an estimate of the amount necessary to cause non-cancer health effects in humans. A HI greater than 1 also requires that corrective action be part of the SMP. Lead was evaluated by estimating blood-lead levels that could occur in the fetus of a pregnant worker. UAC R315-101 does not specify the blood-lead level that requires correction action as part of the SMP. However, U.S. EPA criteria indicate that blood-lead levels above 10 micrograms per deciliter ($\mu\text{g}/\text{dl}$) require attention.

These endpoints were calculated for receptors including a site worker and a construction worker and a teenage wader for the Lee Drain (a canal along the southern boundary of the site). Exposure pathways for the site worker included incidental ingestion of soil, dermal contact with soil, and inhalation of dust. These soil pathways were also used for the construction worker. Groundwater exposure pathways for a construction worker included incidental ingestion of groundwater and dermal contact. For a teenage wader, exposure pathways included incidental ingestion and dermal contact with surface water and sediment.

Risks were calculated for the site and construction workers for each individual feature medium within SWMU 1. A site-wide construction worker was included in the HHRA, as well as a construction worker exposed to both the unrestricted pyrite material and the subsurface soil beneath this material. In some instances when the site worker deterministic cancer risk exceeded the UAC R315-101 cancer risk benchmark for corrective action, a probabilistic risk assessment was performed. The probabilistic risk assessment used exposure parameter distributions to refine the estimate of the potential risk.

Based on the results of the HHRA, corrective action is required only for the restricted pyrite material. The restricted pyrite exceeded the UAC R315-101 criteria for the cancer risk, hazard index, and blood lead level. For the restricted pyrite, the cancer risk for a site worker equaled 4×10^{-4} , the hazard index was 4 for a site worker and 5 for a construction worker, and the blood lead level for the fetus of a pregnant female worker was estimated to equal 11 $\mu\text{g}/\text{dl}$ for a site worker and 19 $\mu\text{g}/\text{dl}$ for a construction worker.

For all other features and receptors at SWMU 1, risks were less than the DSHW corrective action benchmarks: the cancer risk was less than 1×10^{-4} , the hazard index did not exceed 1, and the calculated estimates of blood levels did not exceed 10 $\mu\text{g}/\text{dl}$. Thus, while site management is required for these other features, corrective action is not a required component. For the Lee Drain, the cancer risk was less than 1×10^{-6} , and no further action is necessary to address human health risks.

3.2 Ecological Risk

UAC-R315-101 does not contain "bright-line" criteria analogous to those in the HHRA for the ecological risk assessment (ERA). Rather, an evaluation is made based on the ERA whether there is a significant potential for effects on ecological receptors.

The habitat at the site consists primarily of weedy vegetation with limited ecological resources and poor structure. The Lee Drain, a canal used for flood-control purposes, borders the site to the south. No threatened, endangered, or special-status species of wildlife or plants occur at the site or in the surrounding area. The future land use involves development of commercial/light industrial facilities. The ERA was performed as a modified screening-level ERA (SLERA), with no consideration of controls that will be provided by the future site development that will effectively displace habitat. Assessment endpoints as valued ecological characteristics for the site included populations of foraging terrestrial mammals and birds, and avian populations foraging on aquatic and benthic invertebrates from the Lee Drain.

Representative receptors identified for soil included the deer mouse, which was evaluated both as a herbivore and assuming a diet consisting solely of invertebrates; the American robin, whose diet contains a large proportion of invertebrates; and the California Quail, which is a herbivore. The spotted sandpiper was chosen as a representative receptor for the Lee Drain, as it forages on both aquatic and benthic invertebrates. Measures of effect (measurable characteristics related to the assessment endpoints) were toxicity reference values (TRVs) that were related to populations of these species (as opposed to individuals). An HI was calculated for each receptor by comparing estimated levels of exposure to the TRVs. The hazard indices each exceeded 1, but a detailed analysis diminishes the significance of the calculated HI values and, combined with the low value of the habitat, indicates only a limited potential for ecological effects.

Based on the results of the ERA and assuming the site were to remain undeveloped, there appears to be a limited potential for effects to ecological receptors due to site constituents, in the absence of any controls to prevent the establishment of habitat over time. However, the future land use includes large-scale redevelopment that will effectively displace the already-limited habitat and further reduce the potential for such effects.

4.0 SITE MANAGEMENT REQUIREMENTS

4.1 Corrective Action (Restricted Pyrite Only)

Because the calculated cancer risk levels, hazard index, and blood lead levels associated with the restricted pyrite material exceeded the UAC R315-101 criteria, corrective action is required for this medium. Since none of the other media exceeded the UAC R315-101 criteria, corrective action is only required for the restricted pyrite material, and is not required for any other medium or material at the site.

Corrective Action for the restricted pyrite has already been completed, as documented in Ninigret correspondence dated April 27, 2011. Corrective action consisted of removal of this material for offsite disposal as non-hazardous solid waste at an appropriately permitted disposal facility. Ninigret conducted this removal action with approval and oversight by DSHW representatives. During the removal action, appropriate dust control measures were implemented along with procedures to minimize workers' personal exposure to dust, primarily through work practices. These practices included dust suppression as needed, working on the upwind side of the disturbance to the extent practical, and using respiratory protection as needed.

4.2 Land Use Restrictions and Site Development

The site is in an area already zoned for commercial/industrial (light manufacturing) land use. As such, the current zoning precludes development for residential land use. Additional land use restrictions will be imposed to prevent residential development (and other sensitive uses including child care facilities and early education schools) and ensure that the property is used solely for commercial and industrial purposes in the future. Similarly, no edible crops will be grown on site without the approval of DSHW. These restrictions will be imposed and enforced on the current property owner and subsequent property owners through an environmental covenant.

Direct contact, ingestion and inhalation exposures to site constituents by human and ecological receptors will be further reduced by site redevelopment for commercial/light industrial land use. This will include construction of buildings, paved parking areas, and roadways, and will likely also include establishment of minor landscaped areas.

Redevelopment will also displace the limited existing habitat, discourage new habitat formation, and minimize the presence of habitat thus further reducing the potential for ecological effects from site constituents. Until redevelopment occurs, the site will be managed to minimize the establishment of new habitat in areas where unrestricted pyrite is located, in order to further reduce the limited potential for ecological effects. This will be accomplished by mowing or soil grubbing as needed to prevent significant re-vegetation from colonization by weedy plant species, which may otherwise occur over time in the absence of such controls and which could potentially provide limited additional habitat, especially for foraging terrestrial mammals such as deer mice.

No portion of any future surface waterway (such as re-routing of segments of the Brighton Canal, Lee Drain or similar features) shall be placed within Lots 16 and 17 or elsewhere within the footprint of SWMU 1, unless the waterway is lined or otherwise constructed such that a separation is maintained between the water within the waterway and soils within Lots 16 and 17 or elsewhere within the footprint of SWMU 1 that contains metals concentrations above background levels. The integrity of this separation shall be maintained at all times.

4.3 Groundwater Use Restrictions

Restrictions will also be imposed to prevent use of groundwater from beneath the site. A separate groundwater monitoring program will be established to monitor concentrations of chemicals in groundwater over time. The restriction on groundwater use may be modified or eased if DSHW determines it is appropriate, based on analytical results.

This paragraph applies to cases in which groundwater is encountered during a normal work activity such as underground or in ground utility placement, where groundwater needs to be removed to facilitate that work activity. Groundwater management options are intended to comply with the principles of non-degradation in R315-101-3. In the event that temporary excavation dewatering is needed to facilitate a work activity, any groundwater to be extracted will be characterized for metals constituents and managed accordingly, unless it is to be returned directly to the aquifer from which it originated. Groundwater that is extracted may be returned directly to the aquifer from which it originated within the area adjacent to the ongoing work, so long as the return of that groundwater does not meet the criteria of an injection well as defined at Utah Administrative Code R317-7-2.53. Groundwater with constituent concentrations above background levels may not be placed into an on-site retention pond. Groundwater may be discharged offsite to a sanitary sewer system with prior approval from the system's Publicly Owned Treatment Works (POTW), and may be discharged offsite to a storm water system, the Lee Drain, or the Brighton Canal with prior approval from the Utah Division of Water Quality. Groundwater that does not exceed background concentrations of constituents does not have a restriction on its disposition by DSHW.

4.4 Hazard Notification

Controls provided by corrective action, for the restricted pyrite only, and by the site development as buildings, paved areas, landscaping and other infrastructure will render potential exposure pathways to future commercial workers incomplete. Without exposure, chemical risk is not realized. Notification beyond implementation of all other requirements of this SMP is not required for future commercial workers. If after completion of corrective action for the restricted pyrite, initial commercial workers occupy a portion of the site before the development establishes site wide exposure controls, then potential exposure pathways may temporarily be complete (e.g., for commercial workers outside of buildings). Under these conditions, the risk levels for the commercial worker are within the limits established at UAC R315-101 for current and future land use, assuming no controls to minimize exposure. The potential for exposure will exist for the initial commercial workers, so these workers will be notified of the existing hazard, site controls, and methods to minimize exposure and risks associated with the hazard.

Future construction workers who excavate into subsurface soils and/or groundwater will be exposed to constituents by the exposure pathways evaluated in the risk assessment. Under these conditions, the risk levels are well within the limits established at UAC R315-101 for current and future land use, assuming no controls to minimize exposure. However, because the

exposure pathways will be complete, future construction workers involved in excavation within the site shall be notified of the existing hazards and of procedures to minimize exposure to site constituents. This notification may be provided in the form of a fact sheet, developed by the Owner, to be incorporated into the construction worker's health and safety program. A qualified person shall write the notifications.

4.5 Soil Excavation

Based on the risk levels estimated for future construction workers, exposure to constituents in soils through excavation for construction purposes will not result in risk levels exceeding the standards set forth in UAC R315-101-6(d). Therefore, restrictions on excavation are not necessary beyond hazard notification in accordance with Section 4.4 above.

However, soils excavated from the site must be properly managed to ensure that those soils containing constituent concentrations above background levels are not deposited at any offsite location where more exposure can occur. Therefore, all soils excavated from the site shall either remain on the property or be disposed offsite at an appropriately licensed treatment, storage, and disposal (TSD) facility, with the following exception. There is no restriction on disposition or usage of excavated soils that are determined (through sampling and laboratory analysis) not to contain constituent concentrations above background levels, subject to DSHW's review of the resulting soil data and concurrence that the constituents do not exceed background levels.

4.6 Enforcement

The above site management requirements shall be imposed and enforced on the current owner pursuant to an Environmental Covenant. Following approval of this Site Management Plan, the owner will file and record the Environmental Covenant, a copy of which is attached hereto as Appendix B, providing notice of its obligations concerning access and site management requirements on the property. Additionally, effective the date that this document is recorded in the Salt Lake County Recorder's Office, each deed, title or other instrument of conveyance conveying an interest in the property executed by the owner or its successors in title to the property shall include a notice stating that the property is subject to this Site Management Plan and shall reference the recorded location of the Site Management plan and the restrictions applicable to the property under the Site Management Plan. The above site management requirements are intended to follow title to land in perpetuity unless subsequent determinations by the DSHW or its successors indicate that the remaining level of risk to human health and the environment on the site is sufficiently low that the site management requirements may either be reduced or eliminated in their entirety.

5.0 PROPERTY ACCESS

Commencing on the date of approval of this Site Management Plan and in accordance with Paragraph 59 of the Stipulation and Consent Agreement No 92060130 ("Consent Agreement") between the Utah Solid and Hazardous Waste Control Board ("Board") and Engelhard Corporation, the predecessor-in-title to the property, all activities conducted by the Property Owner under this Site Management Plan shall be subject to inspection and enforcement by the Board in accordance with procedures in the Utah Solid and Hazardous Waste Act, Section 19-6-101 et seq., Utah Code Annotated (1953 as amended). The Property Owner shall provide the Utah Department of Environmental Quality, Division of Solid and Hazardous Waste and its representatives and its authorized contractors, with access at all reasonable times to the property for the purpose of monitoring, and observing activities carried out under the Site Management Plan. These individuals shall conduct themselves in a safe and prudent manner in accordance with the health and safety standards of the Utah Department of Environmental Quality, Division of Solid and Hazardous Waste and with any additional protocols as required by the Property Owner's operations.

6.0 MONITORING REQUIREMENTS

A groundwater monitoring program will be established to monitor concentrations of metals in groundwater within the uppermost aquifer beneath the site. The groundwater monitoring program will be designed to monitor metals concentrations over time, determine whether elevated concentrations in groundwater migrate from the site, and will also be designed to accommodate future land development within the site boundaries. Based on the results of groundwater monitoring, the potential need for additional site management actions will be evaluated and implemented, if necessary, to protect human health and the environment. The groundwater monitoring for the former pyrite impoundment area (SWMU 1) will be incorporated into a site-wide monitoring program that also encompasses other portions of the former Facility. Details of the groundwater monitoring program are specified in a separate Facility-wide groundwater monitoring plan (Terracon, 2010).

Monitoring to ensure compliance with land use restrictions, groundwater use restrictions, limited excavation restrictions, hazard notifications and implementation of the groundwater monitoring program shall be the responsibility of the Property Owner and/or its assigns. These site management actions will be implemented concurrently with the construction and development of the site. Documentation of the state of compliance with these site management requirements is to be updated annually and submitted to DSHW upon request.

7.0 PROCEDURES IF SMP REQUIREMENTS ARE BREACHED

The stated site management requirements provide for continued protectiveness of human health and the environment based on current and future land use. If and when the Property Owner and/or its assigns (Property Owner) becomes aware of a deviation from the site management plan requirements the Property Owner shall notify DSHW within five (5) calendar days of their becoming aware of the deviation. The Property Owner will submit to DSHW a written report within 25 days, detailing the nature of the deviation and the Owner's evaluation. The Property Owner and DSHW will collectively re-evaluate whether the existing site management practices compromise the level of protection afforded by the original site management requirements and, if so, the need for alternate site management requirements will be evaluated to provide a comparable level of protection. Any proposed modification to the site management plan requirements will require DSHW approval.

8.0 REFERENCES

- Glaser, Steven L. Environmental Consulting, 2010. *Baseline Risk Assessment for the Pyrite Impoundment Area, Solid Waste Management Unit 1, Former Engelhard Facility, Salt Lake City, Utah* (September 2010).
- Glaser, Steven L. Environmental Consulting, 2008a. *Baseline Risk Assessment for the Former Plant Site, Former Engelhard Facility, Salt Lake City, Utah* (August 2008).
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- Millennium Science & Engineering, Inc. 2004a. *Site Management Plan for the Western Alum Ponds (Western Portion of SWMU #20), former Engelhard Facility, Salt Lake City, Utah* (June 2004)
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Montgomery Watson, 1994. *Engelhard Corporation Current Conditions Report for the RCRA Facility Investigation Salt Lake City Facility* (April 1994)

Ninigret, 2011. *Documentation of Restricted Pyrite Pile Removal and Disposal (Correspondence dated April 27, 2011)*

Salt Lake City, 2010. *West Salt Lake Zoning Map*, available at
<http://www.slcgov.com/ced/planning/documents/ZoningMaps/WestSaltLake.pdf>

Terracon Consultants, Inc., 2010. *Sitewide Groundwater Monitoring Plan, Former Engelhard Facility, Salt Lake City, Utah* (September 2010)

Terracon Consultants, Inc., 2009a. *Proposed Sampling Approach, Pyrite Impoundment Area (SWMU #1), Former Engelhard Facility, Salt Lake City, Utah* (April 2009)

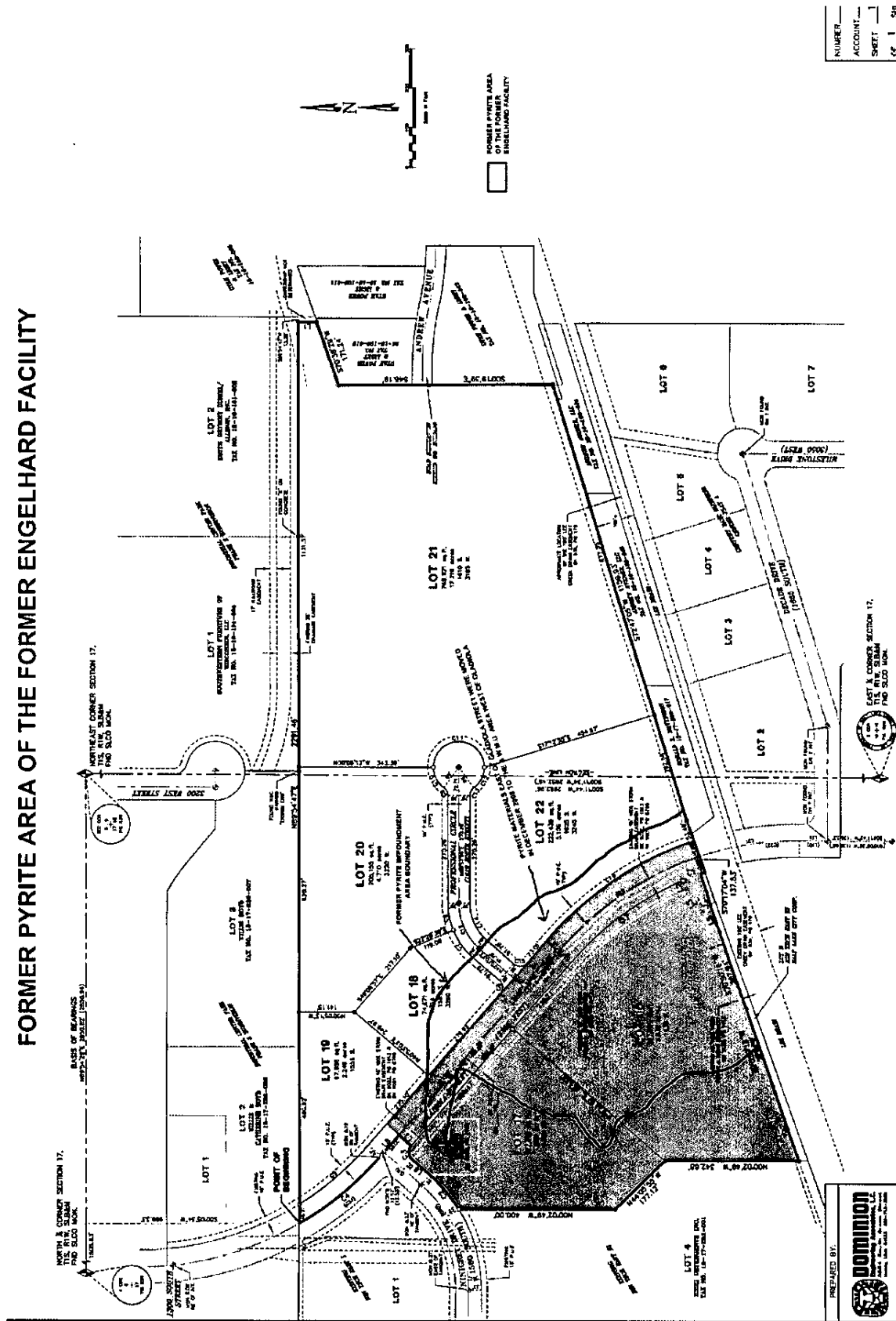
Terracon Consultants, Inc., 2009b. *Documentation of Sampling at Pyrite Area and Lee Drain, Pyrite Impoundment Area (SWMU #1), Former Engelhard Facility, Salt Lake City, Utah* Salt Lake City, Utah (October 2009)

Terracon Consultants, Inc., 2008. *Site Management Plan for the Former Plant Site Area, Former Engelhard Facility, Salt Lake City, Utah* (November 2008)

APPENDIX A

Former Pyrite Impoundment Area Map and Legal Description

FORMER PYRITE AREA OF THE FORMER ENGELHARD FACILITY

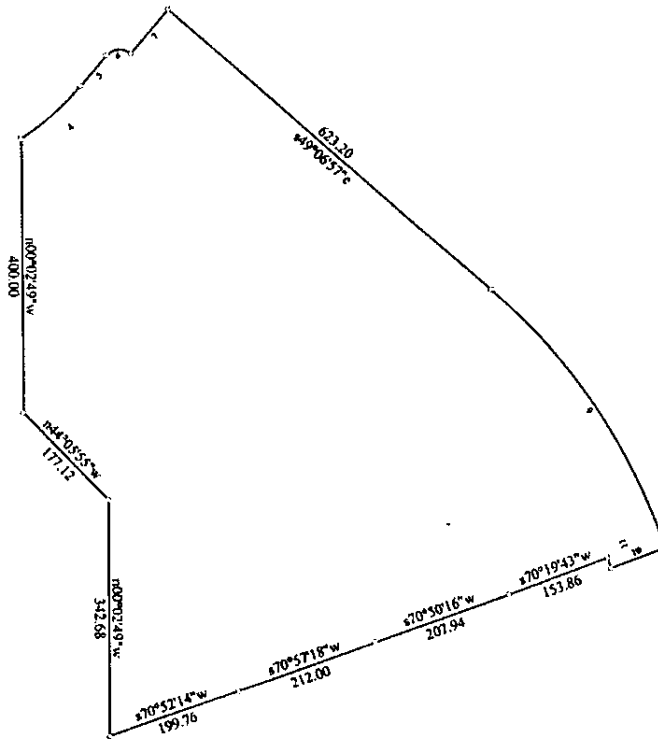


[Property Description]

A parcel of land including all of Lot 16 and 17, Nin Tech East VII and Lot C, Nin Tech East III and also the adjacent area of Gladiola Street in the Northeast Quarter of Section 17, Township 1 South, Range 1 West, Salt Lake Base and Meridian, Salt Lake County, Salt Lake City, Utah, more particularly described as follows:

BEGINNING at the Southwest corner of said Lot 16, which is 1664.23 feet South 89° 54'29" West along the Section line and 2245.64 feet South 00°05'34" East from the North Quarter corner of said Section 17, and running thence North 00°02'49" West 342.68 feet to the northeast corner of said Lot 16; thence North 44°05'55" West 177.12 feet along said Lot 17; thence North 00°02'49" West 400.00 feet along said Lot 17 to a point on a 383.00 foot radius curve to the left and Ninigret Drive; thence Northeasterly 114.67 feet along the arc of said curve through a central angle of 17°09'17" (chord bears North 49°27'42" East 114.24 feet) along said street; thence North 40°53'03" East 58.57 feet along said street to a point of curvature with a 25.00 foot radius curve to the right; thence Easterly 39.27 feet along the arc of said curve through a central angle of 90°00'00" (chord bears North 85° 53'03" East 35.36 feet); thence North 40°53'03" East 84.00 feet to the northeasterly boundary line of Gladiola Street; thence South 49°06'57" East 623.20 feet along said street to a point of curvature with a 852.00 foot radius curve to the right; thence Southeasterly 459.80 feet along said street and the arc of said curve through a central angle of 30° 55'15" (chord bears South 33°39'19" East 454.24 feet); thence South 70°17'04" West 84.04 feet to the southwesterly boundary of said street and a point on a 768.00 foot radius curve to the left; thence Northwesterly 15.39 feet along the arc of said curve through a central angle of 01°08'54" (chord bears North 18° 36'10" West 15.39 feet); thence South 70°19'43" West 153.86 feet; thence South 70°50'16" West 207.94 feet; thence South 70°57'18" West 212.00 feet; thence South 70°52'14" West 199.76 feet to the POINT OF BEGINNING.

Contains 13.036 acres



Title: FORMER PYRITE AREA - DESCRIPTION		Date: 03-31-2011
Scale: 1 inch = 200 feet	File:	
Tract 1: 13.036 Acres: 567844 Sq Feet: Closure = n84.1044e 0.01 Feet: Precision = 1/285975: Perimeter = 3172 Feet		
001=n00.0249w 342.68	007=n40.5303e 84.00	013=s70.5016w 207.94
002=n44.0555w 177.12	008=s49.0657e 623.20	014=s70.5718w 212.00
003=n00.0249w 400.00	009. Ri. R=852.00, Delta=30.5515	015=s70.5214w 199.76
004: L1, R=383.00, Delta=17.0917 Beg=N49.2742E	010=s70.1704w 84.04	
005=n40.5303e 58.57	011: L1, R=768.00, Delta=01.0834 Beg=N18.3610W	
006: Ri. R=25.00, Delta=90.0000	012=s70.1943w 153.86	

APPENDIX B

Environmental Covenant