Mono County
Community Development Department

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Planning Division

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NOTICE OF DECISION
Director Review 20-014
One Year Renewal/Mammoth-Pacific Unit II

APPLICANT: Mammoth Pacific LP

SUBJECT PROPERTY: Unassigned address on Geothermal Plant Road, Mammoth Vicinity Planning Area, APN 037-050-005.

PROPOSAL: Renew Use Permit OIE 86-02 for one-year during which Mammoth Pacific LP will obtain a reclamation bond for the Mammoth Pacific Unit II geothermal plant.

Pursuant to the Mono County General Plan, Chapter 31 Director Review Procedures, based upon the following findings, you are hereby notified that Director Review 20-014 has been:

_____ Granted as requested.
__X__ Granted subject to the attached Conditions of Approval.
_____ Denied

BACKGROUND

Director Review 20-014 would permit a one-year renewal of Use Permit OIE-86-02 for Mammoth Pacific Unit II (MP-II) geothermal power plant located on a Resource Extraction (RE) designated parcel near the junction of US Highway 395 and State Route 203 off of Geothermal Plant Road (APN 037-050-005). Use Permit OIE 86-02 was approved by the Board of Supervisors via Resolution 88-82 in December 1988 and MP-II began operation in December 1990. OIE 86-02 approved "a binary geothermal power plant project, including one 12 MWe (nominal) geothermal power plant unit, four geothermal production wells, four geothermal injection wells, well pads, access roads, sumps, surface pipelines, an electrical interconnection facility and attendant surface facilities."

The Use Permit for MP-II is unique in that the language of the permit specifies in section A(5) that the "permit is valid for a period of thirty (30) years from the date of firm project operation." The MP-II facility began operation in December 1990, so the thirty-year time period expires December 2020. Per section A(8) of OIE 86-02, "minor amendments" to the text of this permit are allowed (full text below) after consultation with the Planning Director and County Counsel.

(8) Minor Amendments:

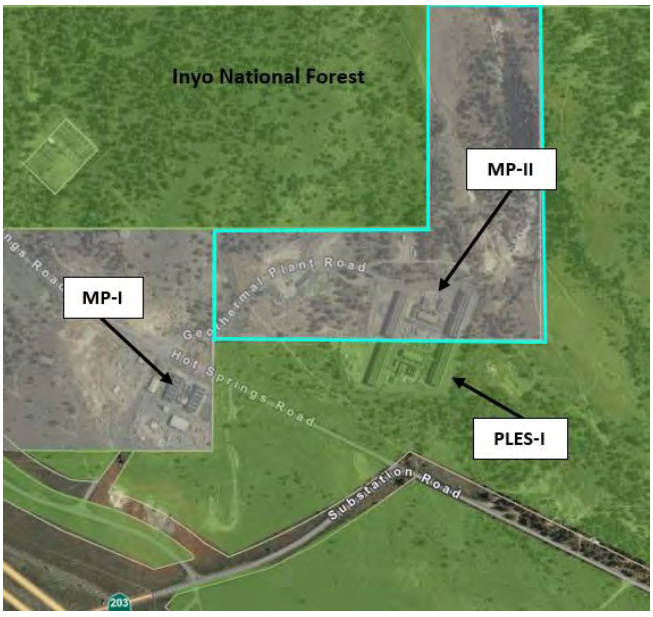
After consultation with Mono County Planning Director and County Counsel, the MCEMD may permit minor amendments to the project layout, uses permitted, plans required under this permit, and conditions of this conditional Use Permit. Any such amendments shall be request in writing by the Permit Holder.

No Actions pursuant to any such request shall be taken without the written permission of the MCEMD. The amendments shall be consistent with the use permitted and conditions of this permit and shall not result in increased environmental impacts.

This Director Review permit therefore proposes to renew Use Permit OIE 86-02 for one year under the minor amendments provision to allow sufficient time for Mammoth Pacific LP to obtain a new reclamation bond for MP-II. No significant operational changes are proposed. As part of the renewal process, Mammoth Pacific LP submitted an updated reclamation cost estimate for site reclamation based on updated Reclamation Plan 12-001. The updated cost estimate submitted by Mammoth Pacific was validated by a third-party engineering firm (Eastern Sierra Engineering) and was accepted by the Community Development Department for the sum of $1,424,590. After the new reclamation bond is obtained by Mammoth Pacific LP for this facility, the Community Development Department will then process a second Director Review permit (DR 20-015) to renew the permit for another thirty-years and include administrative updates and corrections to the text of the permit.

The project parcel is surrounded entirely by the Resource Management (RM) parcels of Inyo National Forest, with the exception of two privately owned parcels, one of which is a Southern California Edison substation and the other is the site of Mammoth Pacific Unit I (MP-I) which is also owed by the project applicant. There are three total geothermal plants in the immediate area, MP-I, MP-II (the subject geothermal plant), and PLES-1 (see Figure 1).

FIGURE 1: GEOTHERMAL PLANT LOCATIONS



LAND DEVELOPMENT TECHNICAL ADVISORY COMMITTEE (LDTAC)

The LDTAC accepted the application for processing at the September 16, 2019 meeting. LDTAC reviewed the draft conditions of approval at the November 16, 2020 meeting.

DIRECTOR REVIEW FINDINGS

Under Mono County General Plan, Land Use Element, Chapter 31.030, the Community Development Department director may issue a Director Review permit after making all the following findings:

1. *All applicable provisions of the Land Use Designations and Land Development Regulations are complied with, and the site of the proposed use is adequate in size and shape to accommodate the use and to accommodate all yards, walls and fences, parking, loading, landscaping and other required features.*

   The parcel is designated Resource Extraction (RE) which is intended to provide for protection of the environment and resources extraction activities in a manner consistent with the Mono County General Plan and applicable state and federal laws. This designation specifically lists "exploring, drilling, and development of geothermal resources" as a permitted use subject to Use Permit. A Use Permit was approved in December 1988 for the MP-II geothermal plant and the project seeks a one-year renewal of the permit to obtain a new reclamation bond based the 2020 reclamation cost estimate. The project does not propose to expand or add any new uses not currently permitted by the existing Use Permit and per the approval of OIE 86-02 the site meets setbacks, lot coverage, and relevant development standards.

2. *The site for the proposed use relates to streets and highways adequate in width and type to carry the quantity and kind of traffic generated by the proposed use.*

   The project provides adequate access via Geothermal Plant Road and approval of DR 20-014 will not change the circulation patterns or impacts demonstrated over the past thirty years of MP-II operation.

3. *The proposed use will not be detrimental to the public welfare or injurious to property or improvements in the area in which the property is located.*

   The proposed one-year renewal of OIE 86-02 is a minor change to the existing permit that would allow additional time for the property owner to obtain a reclamation bond for the 2020 reclamation cost estimate amount and would not be detrimental to the public welfare or injurious to property or improvements in the area. The project does not propose to expand or add any new uses not currently permitted by the existing Use Permit. Further, the original permit specified $150,000 reclamation bond amount under Condition L, and the new reclamation cost amount of $1,424,590 represents a significant change in cost to reclaim the site. Therefore, bonding under the new amount will help ensure that proper funds are reserved to properly implement the MP-II Reclamation Plan after operation stops at the site thereby reducing potential detrimental impacts to the area.

4. *The proposed use is consistent with the map and text of this General Plan and any applicable area plan.*

The property has a land use designation of RE, which allows geothermal plants subject to approval of a Use Permit. Both Countywide land use policies and Mammoth Vicinity Area Plan policies allow for geothermal plants and other resource extraction operations when facilities are implemented in a manner that maintains environmental quality and reduces visual impacts.

Mono County General Plan, Countywide Land Use Policies

GOAL 1. *Maintain and enhance the environmental and economic integrity of Mono County while providing for the land use needs of residents and visitors.*

> ***Objective 1.A.***
> *Accommodate future growth in a manner that preserves and protects the area's scenic, agricultural, natural, cultural and recreational resources and that is consistent with the capacities of public facilities and services.*
>
> > ***Policy 1.A.1.*** *Contain growth in and adjacent to existing community areas.*
> >
> > ***Policy 1.A.4.*** *Designate most lands outside existing community areas for low intensity uses (e.g., open space, agricultural, resource management). Higher-intensity uses (e.g., industrial, resource extraction, large-scale resort development) may be permitted outside existing community areas if it can be demonstrated that the use cannot be accommodated in existing community areas, that the use is incompatible with existing community uses, or that the use directly relies on the availability of unique onsite resources. Higher- intensity uses shall not adversely impact the area's scenic, recreational, cultural and natural resources.*
> >
> > > ***Action 1.A.4.b.*** *Development applications for higher-intensity uses outside community areas shall include an assessment of the potential significant environmental impacts as required by General Plan policies.*
> >
> > ***Policy 1.A.6.*** *Regulate future development in a manner that minimizes visual impacts to the natural environment, to community areas, and to cultural resources and recreational areas.*
> >
> > > ***Action 1.A.6.a.*** *Implement the Visual Resource policies in the Conservation/Open Space Element.*
> >
> > ***Policy 1.A.9.*** *Regulate resource development projects in a manner that maintains environmental quality.*
> >
> > > ***Action 1.A.9.d.*** *Regulate geothermal development and other energy development projects in a manner consistent with the Energy Resources Policies in the Conservation/Open Space Element.*
> > >
> > > ***Action 1.A.9.e.*** *Existing mining operations, geothermal operations, and other existing resource extraction operations, including salable materials operations (e.g., aggregate mining) have been designated Resource Extraction. Once these sites have been exhausted and reclaimed, the land use designation shall be revised to reflect the planned future land use.*

Mono County Land Use Element, Mammoth Vicinity Area Plan

Objective 21.B.
Provide for the land use needs of both the incorporated and unincorporated areas.

Policy 21.B.1. *Contain growth in and adjacent to existing developed areas.*

Policy 21.B.4. *Provide additional regional recreational facilities.*

> ***Action 21.B.4.b.*** *Develop additional interpretive sites in the area, such as the proposed geothermal interpretive center, as funding becomes available.*

Policy 21.C.4. *Regulate geothermal and mining and reclamation activities in the Mammoth vicinity in a manner that retains the scenic, recreational, and environmental integrity of the Mammoth vicinity.*

> ***Action 21.C.4.a.*** *All geothermal, mining and reclamation activities shall comply with the policies of the county Conservation/Open Space Element and the county Reclamation Ordinance.*
>
> ***Action 21.C.4.b.*** *Geothermal and mining activities shall be allowed only in areas designated Resource Extraction; exploratory activities shall be allowed only in areas designated Resource Management, Open Space, or Agriculture.*

5. *The improvements indicated on the development plan are consistent with all adopted standards and policies as set forth in the Land Development Regulations, this General Plan and any applicable area plan.*

   The one-year renewal of OIE 86-02 is consistent with Countywide Land Use policies, Mammoth Vicinity Area Plan policies, and the conditions of the existing permit. See Findings #1 and #4 above.

6. *The project is exempt from the California Environmental Quality Act (CEQA).*

   This project qualifies for a Class 3 Categorical Exemption under CEQA Guideline 15301 which consists of operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use. No new or expanded uses or structures are proposed as part of this renewal. This project qualifies under 15301 because the one-year renewal is minor amendment to the existing use permit.

ATTACHMENTS

- Attachment 1 – Use Permit OIE 86-02
- Attachment 2 – 2020 MP-II Reclamation Cost Estimate
- Attachment 3 – Reclamation Plan 12-001 (Approved during Repowering of MP-I in 2012)

CONDITIONS OF APPROVAL

DR 20-014 is issued with the following conditions:

1. Future development shall meet requirements of the Mono County General Plan, Mono County Code, and project conditions.

2. Project shall comply with all Mono County Building Division, Planning Division, Public Works Department, and Environmental Health Department requirements.

3. The project shall submit a fully executed reclamation bond for MP-II listing Mono County as the beneficiary for the $1,424,590 cost as specified in the 2020 reclamation cost estimate (Attachment 2) and apply for a new Director Review permit, which will supersede this one if approved, for a 29-year extension by December 31, 2021.

4. Termination. A Director Review shall terminate, and all rights granted therein shall lapse, and the property affected thereby shall be subject to all the provisions and regulations applicable to the land use designation in which such property is classified at the time of such abandonment, when any of the following occur:

   A. There is a failure to commence the exercise of such rights, as determined by the Director, within two years from the date of approval thereof. Exercise of rights shall mean substantial construction or physical alteration of property in compliance with the terms of the Director Review.

   B. There is discontinuance for a continuous period of one year, as determined by the Director, of the exercise of the rights granted.

   C. No extension is granted as provided in Section 31.080.

8. Extension: If there is a failure to exercise the rights of the Director Review within one year of the date of approval, the applicant may apply for an extension for an additional one year. Any request for extension shall be filed at least 60 days prior to the date of expiration and shall be accompanied by the appropriate fee. Upon receipt of the request for extension, the Planning Division shall review the application to determine the extent of review necessary. Conditions of Approval for the Director Review may be modified or expanded, including revision of the proposal, if deemed necessary. The Planning Division may also deny the request for extension. Exception to this provision is permitted for those Director Reviews approved concurrently with a tentative parcel or tract map; in those cases, the approval period(s) shall be the same as for the tentative map.

9. Revocation: The Planning Commission may revoke the rights granted by a Director Review, and the property affected thereby shall be subject to all the provisions and regulations of the Land Use Designations and Land Development Regulations applicable as of the effective date of revocation. Such revocation shall include the failure to comply with any condition contained in the Director Review or the violation by the owner or tenant of any provision pertaining to the premises for which such Director Review was granted. Before revocation of any permit, the commission shall hold a hearing thereon after giving written notice thereof to the permittee at least 10 days in advance of such hearing. The decision of the commission may be appealed to the Board of Supervisors in accordance with Chapter 47, Appeals, and shall be accompanied by an appropriate filing fee.

This Director Review permit shall become effective 10 days following the issuance of the Director's decision. This decision may be appealed within 10 days by filing a written notice of appeal with the secretary of the Planning Commission. If an appeal is filed, the permit will not be issued until the appeal is considered and the Planning Commission renders a decision.

PREPARED BY: Kelly Karl, Associate Planner DATE OF DECISION: _____

SIGNED: _____
Wendy Sugimura, Community Development Director

ATTACHMENT C

CONDITIONS FOR CONDITIONAL USE PERMIT NO. OIE-86-02
MAMMOTH-PACIFIC UNIT II
GEOTHERMAL DEVELOPMENT PROJECT

The following conditions of approval are made a part of Conditional Use Permit No. OIE-86-02 and are binding on the Permit Holder during the life of the permit unless amended, modified or excluded in the manner required by law.

The Permit Holder acknowledges that Hot Creek Gorge springs and Hot Creek Hatchery springs are very significant environmental and economic resources for the Eastern Sierra area. Geothermal development projects in the Long Valley area could present potential impacts to those resources and the economic, recreational and tourism interests which depend on them in the absence of enforceable conditions to protect those interests. This permit would not be issued in the absence of these conditions and the certainty of their enforceability.

Changes in the temperature and flow of the springs can have significant adverse effects on the foregoing resources. Measures must be in place at all times and utilized to monitor project operations and to immediately and accurately detect changes in the geothermal reservoir before they impact the springs. Where any such impacts are anticipated as a result of careful monitoring, it is the purpose of these conditions to assure that mitigation measures will be taken by the Permit Holder and Mono County to protect the springs and dependent interests.

A. GENERAL PROVISIONS

1) **PERMIT HOLDER:** **Mammoth-Pacific**
6055 East Washington Boulevard
Suite 808
Commerce, California 90040

2) PROJECT: A binary geothermal power plant project, including one (1) 12 MWe (nominal) geothermal power plant unit, four (4) geothermal production wells, four (4) geothermal injection wells, well pads, access roads, sumps, surface pipelines, an electrical interconnection facility, and attendant surface facilities.

3)	ZONING AND DEVELOPMENT CODE:	This Conditional Use Permit is issued in accordance with, and is subject to, all applicable provisions of Chapter 19 (Zoning and Development Code) of the Mono County Code, specifically including all provisions of Chapter 19.38 of that Code.
4)	CONDITIONAL USE PERMIT:	This Conditional Use Permit is issued on the basis of all the conditions herein contained. VIOLATION OF, OR FAILURE TO CONFORM TO, THE CONDITIONS HEREIN CONTAINED, APPLICABLE PROVISIONS OF THE MONO COUNTY CODE, OR OTHER APPLICABLE LAWS, RULES AND REGULATIONS, MAY SUBJECT THE PERMIT TO REVOCATION OR THE PERMIT HOLDER TO OTHER ENFORCEMENT PROCEEDINGS.
5)	INCLUSIVE DATES; EXTENSIONS:	This permit is valid for a period of thirty (30) years from the date of firm project operation. This Conditional Use Permit shall terminate and may be extended in accordance with Section 19.38.060 and Section 19.38.070 of the Mono County Code. In addition, and in accordance with those procedures, the Mono County Planning Commission may, after public hearings, modify or revoke this Conditional Use Permit upon a finding that the uses herein permitted, or any of them, are creating conditions that are hazardous or detrimental to the health or safety of the general public or property in the vicinity of the uses.
6)	USES PERMITTED:	This Conditional Use Permit grants approval for those uses and improvements described in these conditions and in the "Mammoth-Pacific Geothermal

Development Project Use Permit Application," except as the latter is amended, modified, or conditioned by this Conditional Use Permit.

7) INSPECTIONS: The Permit Holder shall allow authorized representatives of the County of Mono to make periodic inspections at any reasonable times in order to assure compliance by the Permit Holder with the conditions of this Conditional Use Permit. The Mono County Energy Management Director (MCEMD) and the Mono County Director of Public Works (MCDPW), and their designees, are authorized representatives of the County of Mono.

8) MINOR AMENDMENTS: After consultation with the Mono County Planning Director and County Counsel, the MCEMD may permit minor amendments to the project layout, uses permitted, plans required under this permit, and conditions of this Conditional Use Permit. Any such amendments shall be requested in writing by the Permit Holder.

No action pursuant to any such request shall be taken without the written permission of the MCEMD. The amendments shall be consistent with the uses permitted and conditions of this permit and shall not result in increased environmental impacts.

9) REPORTS: The MCEMD may from time to time request written reports from the Permit Holder with respect to compliance with the conditions of this Conditional Use Permit. All such written reports shall be submitted to the MCEMD within a

reasonable time after each request.

10) INDEMNIFICATION: The Permit Holder shall defend, indemnify, hold harmless, and pay the reasonable attorney fees and court costs of the County of Mono, arising out of claims or lawsuits, to the extent that any such claims or lawsuits arise out of the negligence or willful misconduct of the Permit Holder or its agents, employees, or contractors.

11) PROHIBITED USES: Uses which are not allowed by this Conditional Use Permit are prohibited.

12) COMPLIANCE WITH OTHER PERMITS: The Permit Holder shall comply with the permits and lawful orders of all other agencies having jurisdiction over the permitted uses and improvements and the authorized representatives of those agencies.

13) COUNTY APPROVAL: A number of permit conditions require prior approval by County officials for certain required plans or other submittals. Such approval shall not be unreasonably withheld.

B. GEOLOGY, GEOLOGIC HAZARDS

1) To the extent compatible with engineering considerations, all facilities, including well pads and geothermal pipelines, shall be located so as to avoid faults. A geotechnical report, satisfactory to the California Division of Oil and Gas (CDOG) or the United States Bureau of Land Management (BLM), as applicable, shall be prepared for each well site by a registered engineering geologist before commencement of well site construction.

		reasonable time after each request.
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13)	COUNTY APPROVAL:	A number of permit conditions require prior approval by County officials for certain required plans or other submittals. Such approval shall not be unreasonably withheld.

B. GEOLOGY, GEOLOGIC HAZARDS

1) To the extent compatible with engineering considerations, all facilities, including well pads and geothermal pipelines, shall be located so as to avoid faults. A geotechnical report, satisfactory to the California Division of Oil and Gas (CDOG) or the United States Bureau of Land Management (BLM), as applicable, shall be prepared for each well site by a registered engineering geologist before commencement of well site construction.

2) In accordance the Alquist-Priolo Special Studies Zone Act, any project structures intended for human occupancy must be located at least fifty (50) feet from the trace of active faults.

3) All geothermal wells shall be designed and completed in accordance with the requirements of the CDOG or BLM, as applicable.

4) An "Emergency Spill Containment Plan" shall be completed and submitted to the MCEMD and to the Lahontan Regional Water Quality Control Board (RWQCB), and accepted by the RWQCB, before commencement of any construction activities (See Conditions D.19 through 21.).

5) In order to reduce impacts derived from fault rupture and/or volcanic events, emergency shutdown procedures shall be established prior to operation, and submitted to and approved in writing by MCEMD prior to start-up. Subsequent to project start-up, shutdown valves and other controls shall be tested and maintained, and shall be regularly inspected at least once per month. This testing and maintenance shall be properly documented, and a summary of recordation shall be submitted to the MCEMD on a quarterly basis.

6) Project facilities shall be designed so that ground surface tilts on the order of 0.001 feet/foot will have no effect on the operation of the power plant.

7) Project facilities shall be constructed in conformance with Uniform Building Code Seismic Risk - Zone 4 standards and applicable building standards of Mono County and the BLM, as appropriate.

8) One or more subsidence detection benchmarks shall be constructed at each completed well prior to prolonged production and shall be tied to existing regional subsidence detection networks. Benchmarks shall be surveyed every two years. Surveys shall be second order or better and shall be conducted under the direct supervision of a registered civil engineer or licensed land surveyor using equipment acceptable to the National Oceanographic and Atmospheric Administration regulations for second order surveys.

C. EROSION AND SEDIMENTATION CONTROL

1) A landscape and revegetation plan shall be submitted to and approved by the MCEMD prior to commencement of construction activity. The approved Landscape/Revegetation Plan shall be

attached to this Conditional Use Permit and incorporated herein as Exhibit A.

2) A Grading Plan shall be prepared for the plant site, access roads and well sites. The Grading Plan shall be submitted to the BLM for approval, if appropriate, and to the MCDPW for approval and issuance of a grading permit. In addition to the requirements of the MCDPW, the following provisions shall be incorporated into the conditions of the grading permit:

(a) All earthwork shall be conducted in accordance with a detailed project schedule submitted with the Grading Plan. The schedule shall provide for completion of earthwork in a single construction season.

(b) Existing drainage patterns shall not be modified significantly, and drainage concentrations shall be avoided.

(c) All loose piles of earthwork materials and debris shall be protected to avoid discharges of silt-laden runoff. Surplus or waste material shall not be placed in drainage ways, nor within the 100-year flood boundary of Mammoth Creek or its tributaries.

(d) Limits of construction work will be clearly delineated and disturbances of adjacent soil and vegetation will be avoided. Where considered necessary, by the MCDPW, temporary fencing will be erected to delineate the work area and to prevent disturbance to non-construction areas.

(e) Dust control measures (watering trucks) will be implemented throughout the construction period.

(f) All exposed soil areas will be stabilized and revegetated with climate-adapted plants in accordance with the approved Landscape/Revegetation Plan. All stockpiles of soil materials not utilized on the project site will be removed and disposed of at an approved site.

(g) The Landscape/Revegetation Plan shall be reevaluated by the MCEMD during the spring following initial planting. If it is found by the MCEMD that initial plantings have not survived, additional revegetation will be required not later than the immediately succeeding fall season. Thereafter, the revegetation program shall be evaluated

every two years by the MCEMD and remedial measures taken. All plantings shall be maintained or replanted for the entire life of the power plant.

(h) If buried cultural deposits are discovered during site construction activities which were not identified in earlier cultural resource clearances for the project, grading and site construction activities in the vicinity of the cultural deposit shall be halted until the deposit can be evaluated by the Inyo National Forest archaeologist, or by a cultural resource specialist pursuant to the requirements to the California State Office of Historic Preservation (SHPO).

3) Prior to commencement of site construction, a Drainage and Erosion Control Plan shall be submitted for approval to the MCDPW, the RWQCB, and the BLM, as applicable. Site construction shall not commence without the prior written approval of the MCDPW. The design of the erosion control facilities, and the development of construction schedules, shall comply with project-specific RWQCB guidelines and United States Forest Service (USFS) best management practices for the Mammoth Creek watershed and shall incorporate the following:

(a) No more than one-quarter acre shall be disturbed before implementing erosion control measures during the construction period, including such measures as temporary dikes, filter fences, hay bales, and retention basins as necessary.

(b) No discharges of silt, waste material, toxic substances, or other deleterious matter including water pumped from excavations to surface waters shall be permitted.

(c) Permanent drainage and sediment collection, retention, and infiltration facilities shall be constructed and maintained to prevent sediment and waste discharges from leaving the project area. These facilities shall be periodically inspected and maintained as required.

(d) The power plant site retention structure shall be designed to retain all runoff from a 20-year, one-hour design storm event. The storage volume of the retention basin will be the volume resulting from the design storm plus an allowance for sediment accumulation between maintenance periods.

(e) The discharge structure from the retention basin (for flows in excess of the design storm) and the channel downstream of the basin shall be designed to minimize erosion. Any other drainage by construction activities shall be stabilized by appropriate measures.

(f) All disturbed areas shall be stabilized by appropriate measures by October 15 of each year.

(g) All work performed between October 15 and May 1 shall be conducted in a manner such that the work can be winterized within forty-eight (48) hours.

4) To the extent feasible, all project facilities shall be constructed outside areas subject to flooding. Facilities constructed in areas subject to flooding shall be designed to withstand both periodic inundation and the erosion forces in flood-level flows.

5) Prior to final project design, a detailed investigation of onsite soils shall be conducted by a soils engineer. Pursuant to the results/findings of the soils investigation, appropriate foundation design measures shall be incorporated into facility construction.

6) If potentially unstable slopes are found to exist as a result of the investigation, plant facilities including fluid conveyance lines shall not be located within the affected proximity of slopes susceptible to either landslides or rock falls.

7) Filled slope banks shall not exceed a gradient of 2:1 unless approved otherwise by a registered engineering geologist and the MCDPW. Toes of all fills shall be stabilized with rock and gravel or keyed into stable soil and placed to reduce erosion potential to an absolute minimum on all fill slope banks. Cut slopes shall not exceed a gradient of 1.5:1, unless approved by a registered engineering geologist or soils engineer, and the MCDPW.

8) Subdrains shall be provided under all fills where natural drainage courses and seepage are evident, when determined to be necessary by a registered civil engineer or a registered engineering geologist.

9) Buffer zones of undisturbed vegetation shall be maintained one hundred (100) feet on either side of streams (a

creek, stream, or watercourse indicated by a solid or broken blueline on a U.S. Geological Survey 7.5 or 15 minute series topographic map). No geothermal-related construction shall take place within the buffer zone without prior written approval from the MCEMD.

D. HYDROLOGY AND WATER QUALITY

1) All project activities shall conform to applicable requirements of the CDOG, the RWQCB and the BLM.

2) Subsequent to the completion of well drilling, drilling fluids shall drain into and shall be allowed to dry in the sump. They shall then be either removed to an appropriate landfill for disposal of this type of waste or stabilized onsite by compaction and revegetation.

3) All wellsites and drilling sumps shall be bermed and provided with filter fences to provide containment for accidental spills and fluid discharges.

4) The entire power plant site shall be bermed and planted with native plant species (or other non-native species, as approved). Hydrocarbon storage tanks within the power plant site shall also be bermed.

5) So as to prevent hydrothermal reservoir pressure declines, injection of substantially all of the extracted geothermal fluids into the hydrothermal reservoir is required. Incidental uses of the produced geothermal fluids (i.e., well drilling, well testing, emergency fire water makeup, etc.) are exempted from this injection requirement.

6) The Permit Holder shall prepare and submit to the MCEMD, prior to commencement of construction, a detailed Blowout Contingency Plan including blowout prevention equipment required during drilling. At least 10,000 gallons of cold water shall be stored at each well site to quench the well should a blowout occur during drilling. At least 50,000 gallons of cold water shall be available at all times on the project site during power plant operations. Water used for this purpose shall not be extracted from surface water sources in a manner which would harm aquatic vertebrate species dependent upon the surface water source.

7) Regular testing and maintenance of the automatic pump shutdown system shall be conducted by the Permit Holder with copies of initialed check sheets and other documentation provided

to the MCEMD on a quarterly basis. Emergency drills to test the system shall be conducted by the Permit Holder upon the reasonable request of the MCEMD.

8) During construction and plant operation, regular site maintenance, cleanup, vehicle maintenance, and the proper storage and handling of potentially hazardous materials pursuant to RWQCB requirements, shall be conducted by the Permit Holder to prevent contamination of soils and surface runoff.

9) The Permit Holder shall be required to implement a Hydrologic Resource Monitoring Plan to monitor baseline conditions and detect changes in the existing hydrothermal reservoir pressures and shallow aquifer water levels, as well as the discharge and temperatures of selected thermal springs in the Long Valley Caldera. The approved Hydrologic Resource Monitoring Plan shall be attached to this Conditional Use Permit and incorporated herein as Exhibit B. The Permit Holder may establish its own monitoring plan and must participate in the plan of the Long Valley Hydrologic Advisory Committee (LVHAC). The Plan shall include a formula to calculate the appropriate portion of costs to be repaid to the County by the Permit Holder in the event that the County expends monies to collect baseline data on the hydrologic system in Long Valley. In either case, the Plan must receive final written approval from the MCEMD prior to commencement of construction activities.

10) The Hydrologic Resource Monitoring Plan, prepared n conformance with condition D.9, shall include:

(a) A schedule for periodic reduction of the data collected and submitting a summary of the data to the MCEMD.

(b) A schedule for preparing a periodic monitoring report to the MCEMD; and

(c) Provisions for periodic review and assessment of the monitoring data by a qualified hydrologic consultant acceptable to the MCEMD and LVHAC.

11) Costs associated with third party review and assessment of the data collected in conformance with the Hydrologic Resource Monitoring Plan shall be borne by the Permit Holder.

12) The Permit Holder shall prepare a baseline data report as part of the Hydrologic Resource Monitoring Plan required by condition D.9, which identifies all significant hydrologic

baseline information available for the project area including information collected for Mammoth-Pacific Unit I operations.

13) If scientific evidence demonstrates that project operations are significantly threatening, or causing, pressure or temperature changes to the Hot Creek Gorge springs or Hot Creek Hatchery springs, the Permit Holder shall implement such additional mitigation measures as are reasonably required by the MCEMD. Such additional mitigation measures may include, but shall not be limited to, the following:

(a) Drilling and monitoring a new observation well(s), or otherwise amending the Hydrologic Resource Monitoring Plan;

(b) Reorienting existing production and injection operations, or either of them, to increase or decrease, as appropriate, hydrologic reservoir temperature or pressure east of the well fields;

(c) Injecting a slip stream of hot geothermal fluid from the production area directly into the eastern most injection well(s) to compensate for pressure or temperature changes in the direction of Hot Creek Gorge springs and Hot Creek Hatchery springs;

(d) Drilling new injection well(s) south or east of the project area and injecting hot geothermal fluid from the production area to compensate for temperature and pressure decreases in the direction of Hot Creek Gorge springs and Hot Creek Hatchery springs;

(e) Curtailing, or discontinuing entirely, geothermal operations.

Prior to commencing geothermal operations, the Permit Holder shall prepare, and have approved by the MCEMD, a detailed program for timely implementing any additional hydrologic monitoring or remedial action measures which may be required through approval of this Use Permit. At a minimum, the program must include basic engineering designs, preliminary equipment fabrication and construction schedules, and permits or rights-of-way acquisition plans and schedules. The Permit Holder shall review and update the program annually, or as required by the MCEMD.

14) The Permit Holder shall continue to maintain and monitor existing geothermal production zone Monitoring Well

SF 65-32 in conformance with the requirements set forth in the approved Hydrologic Resource Monitoring Plan. Monitoring information shall be made available to the MCEMD and the LVHAC. If the MCEMD, in consultation with the LVHAC, determines a need to supplement geothermal reservoir monitoring information developed from existing geothermal production zone Monitoring Well SF 65-32, a geothermal injection zone monitoring well may also be required to be drilled, maintained, and monitored in conformance with the requirements of this condition. The injection zone monitoring well shall generally be located east-southeast of the project injection field, with the specific location to be determined by the MCEMD, in consultation with the LVHAC and the appropriate governmental agencies with land use jurisdiction.

15) If the MCEMD, in consultation with the LVHAC, determines a need to supplement monitoring information developed from the geothermal production and/or injection zone monitoring well(s), a second monitoring well may be required to be drilled, maintained, and monitored in conformance with the requirements of Condition D.14), above. The second monitoring well shall generally be located in the area of Colton Springs, with the specific location to be determined by the MCEMD and the appropriate governmental agencies with land use jurisdiction. The MCEMD, in conformance with recommendations by the LVHAC, may also require mitigation actions in addition to the second monitoring well including, but not limited to, one or more of the actions described in conditions D.13(a) through D.13(e), above.

16) If the MCEMD, in consultation with the LVHAC, determines that monitoring well (located near Colton Springs) and all other monitoring information indicate a need for further information with respect to a threat posed by project operations to thermal water supplying the Hot Creek headsprings which support the Hot Creek Hatchery, then the MCEMD may require that a third monitoring well be drilled, maintained, and monitored in conformance with the requirements of Condition D.14, above. The third monitoring well shall generally be located in the area between Colton Springs and the Hot Creek headsprings, with the specific location to be determined by the MCEMD and the appropriate governmental agencies with land use jurisdiction. The MCEMD, in consultation with the LVHAC, may also require mitigation actions in addition to the third monitoring well including, but not limited to, one or more of the actions described in conditions D.13(a) through D.13(e), above.

17) If monitoring activities of the three monitoring wells described above indicate that a progressive temperature and/or

pressure decline or increase from the project area is occurring that threatens a change of temperature at the Hot Creek headsprings the Permit Holder shall, at a minimum, provide a suitable source of thermal energy or water to the affected Hot Creek headspring(s) to maintain the headspring(s) at a temperature within the range of recorded natural variation of the respective headspring(s).

18) The Permit Holder shall be responsible for maintaining the thermal energy or water conveyance facilities described in Condition D.17, above, for as long as an alternate source of water is needed to maintain the water temperatures within the range of natural variation in the affected Hot Creek headspring(s) as recorded prior to the onset of impacts from project operations.

19) The Permit Holder shall design and install prior to construction or onsite well drilling an emergency geothermal spill containment facility down-gradient of the developed project area, between the developed project area and Mammoth Creek, which shall be capable of storing at least twice the maximum credible geothermal spill volume which could occur from a catastrophic pipeline rupture within the project area.

20) The emergency geothermal spill containment facility shall be activated immediately upon recognition of a pipeline rupture, or other catastrophic event, which could result in a major spill of geothermal fluid. The operation of the facility's service-gate(s) shall be operated on a "fail safe" basis.

21) Geothermal fluid collected by, and retained within, the emergency geothermal spill containment facility shall not be discharged, except by injection, until such time as the fluid cools to a temperature which will not result in adverse thermal impacts downstream of the containment facility, and the Permit Holder shall neither discharge, nor inject, fluids retained within the emergency spill containment system except in conformance with requirements of the RWQCB.

22) Permit Holder shall design and incorporate the emergency geothermal spill containment facility and related operations, as described in conditions D.19 to D.21, into the existing Mammoth-Pacific Unit I project.

23) The use of cool, potable water for the condensation of hydrocarbon working fluids is prohibited.

E. AIR QUALITY

1) The Permit Holder shall obtain all required construction and operation permits of the Great Basin Unified Air Pollution Control District and shall comply with the provisions thereof and any modifications.

2) During construction activities, water shall be applied regularly to graded areas as a dust palliative. Water used for this purpose shall not be extracted from surface water sources in a manner which would harm aquatic vertebrate species dependent upon the surface water source.

3) Unpaved project roads and activity areas shall be chipsealed or covered with gravel to further reduce dust generation.

4) Construction specifications shall provide for the minimum practical amount of grading/soil handling in an effort to reduce particulate generation.

5) To avoid exceeding the state hydrogen sulfide ambient air quality standard, only one geothermal well at a time shall be flow-tested to the atmosphere.

6) Onsite personnel shall be trained so as to understand the dangers of hydrogen sulfide exposure and the appropriate actions to initiate for the safety of all concerned.

7) An odorant shall be added to the plant's hydrocarbon working fluid at such tine and in such manner as will assure leak detection.

8) Well flow tests to the atmosphere shall not be conducted under conditions which could cause significant icing or fog clouds.

9) Hydrocarbon leak detectors shall be installed onsite.

F. TERRESTRIAL AND AQUATIC BIOLOGY

1) All pipelines which intercept identified mule deer migration corridors shall be provided with facilities to crossover the pipelines. The location and design of these crossing facilities shall be approved by the MCEMD, after consultation with the California Department of Fish and Game (CDFG), prior to their placement.

2) All project-related roads on the leasehold property shall be posted for a 15-mile-per-hour speed limit.

3) The Permit Holder shall comply with the requirements of the state Endangered Species Act.

4) All roads and well sites shall be constructed to avoid mature trees, where practical; to minimize impacts on highly erodible surfaces; and to avoid botanically or otherwise sensitive habitats identified within the project area.

5) The Permit Holder shall restock trout in sections of Mammoth Creek or Hot Creek adversely affected by any spill of geothermal fluid from the project area which results in fish mortality. The Permit Holder shall restore to its prior state any fish habitat in Mammoth Creek or Hot Creek which has been adversely affected by any spill of geothermal fluid from the project area.

6) Should Mono County develop a County-wide program which requires exactions from developers for offsite mitigation of impacts to migratory deer herds, the Permit Holder shall participate in any such program to the extent that the Permit Holder's operations contribute to impacts mitigated in relation to operations of other participants in such program.

G. CULTURAL RESOURCES

1) All access roads, transmission line corridors, and pipeline corridors shall be consolidated as much as possible to reduce the areas of potential disturbance to cultural resources.

2) All grading and site construction activities shall avoid, to the extent possible, all cultural resource sites identified in the cultural resource survey report prepared for the project area. If identified cultural resource sites cannot be avoided, a cultural resource clearance shall be obtained from the USFS, or from a cultural resource specialist pursuant to requirements of the SHPO, prior to any grading or site construction activities which will affect the cultural resources.

3) The Permit Holder shall comply with the applicable requirements of the USFS and SHPO for protecting known and future identified cultural resource sites within the project area.

4) Condition C.2)(h), above, is also incorporated at this point by this reference.

5) The Permit Holder shall provide continued access to Native Americans through the project to their traditional use areas.

H. VISUAL RESOURCES/AESTHETICS

1) In order to afford adequate screening by existing vegetation, the power plant site for MP II shall be located in the Alternate Plant Site as identified in Figure 2-7 of the Final Environmental Impact Report prepared for the project. In addition, the Permit Holder shall implement those changes in the location of specific power plant equipment and well sites and general changes in the project designed to mitigate visual impacts as identified in the Final EIR Addendum.

2) The maximum height of any permanent structure on the project site shall be less than thirty-two (32) feet.

3) The project cooling system shall be designed so it will not emit visible steam or smoke.

4) All plant site and area lighting shall be at a minimum level consistent with the safety of plant operations and shall be directed downward or otherwise shielded.

5) Pipelines shall be trenched unless trenching is determined to be inappropriate in whole or in part by the MCEMD. Otherwise pipelines shall be screened by berms, fences, or existing native vegetation. Berms are to be planted with native plant species or approved non-native species. All screening shall be sufficient to screen the pipelines from view along a segment of U.S. Highway 395 from a point 0.4 miles north of the Sherwin Creek Road turnoff (MNO R24.40) to State Route 203.

6) The use of overhead pole electric transmission lines by the Permit Holder is not permitted. All electric transmission lines shall be conveyed on pipeline sleepers, buried, or otherwise constructed near ground level to minimize their visibility.

7) All disturbed soil areas shall be revegetated as soon as possible subsequent to the completion of construction and site development activities in accordance with the requirements of Conditions C.2)(f) and C.2)(g).

8) The Permit Holder shall comply with the Landscape/ Revegetation Plan, attached hereto as Exhibit A.

9) The exterior of all project structures, including fluid conveyance pipelines, shall be painted in neutral, earthtone colors so as to blend in with the surrounding environment.

10) To the extent compatible with engineering and aesthetic considerations, all exterior surfaces shall be rough texture, with no reflective metal or glass surfaces oriented toward the south or west.

11) Standards for fencing and grading shall be included in the Landscape/Revegetation Plan.

12) To the extent possible for operations, all heavy equipment and construction vehicles, equipment and supplies shall be stored out of sight of a casual observer within the visual corridor.

13) Water shall be used to control dust generated by heavy equipment during site grading and well drilling activities. Water used for this purpose shall not be extracted from surface water sources in a manner which would harm aquatic vertebrate species dependent upon the surface water source.

I. NOISE

1) The noise level from Mammoth-Pacific II operations shall not exceed a 24-hour Leq of 55 dB(A) at a distance of one-quarter mile from the power plant site boundary.

2) All construction equipment and engines utilized on the project site shall be muffled and maintained in accordance with all applicable noise standards.

J. PUBLIC SERVICE

1) Perimeter security fencing shall be constructed around the power plant.

2) The Permit Holder shall provide onsite security personnel at all times. Security personnel may include plant operating personnel.

3) The Permit Holder shall submit a Fire Prevention and Protection Plan acceptable to the fire protection agency with jurisdiction prior to charging the power plant with hydrocarbon working fluid.

4) The Permit Holder shall provide mitigation fees for the reasonably expected costs of fire protection caused by project operations to the fire protection agency with jurisdiction.

K. COMPLIANCE OFFICER

1) The Permit Holder shall pay the reasonable costs of a contractor or County employee (Compliance Officer) whose duties shall include assuring compliance with these Conditional Use Permit conditions and other laws and regulations applicable to the project.

2) The Permit Holder shall deposit the sum of five thousand dollars ($5,000) with the County within thirty (30) days after Conditional Use Permit approval as a security deposit for payment of compliance costs. The security deposit shall be refunded by the County within thirty (30) days after the MCPC determines that a Compliance Officer is no longer necessary.

3) The County shall bill the Permit Holder for the actual costs of the Compliance Officer on a monthly or quarterly basis, at the County's discretion. If the Compliance Officer is a contractor, the bill to the Permit Holder shall include a copy of the statement given to the County by the contractor. If the Compliance Officer is a County employee, the costs billed to the Permit Holder shall be that fraction of the employee's monthly salary, benefits and related expenses as the amount of the employee's time spent on project compliance is to the employee's total County work time based on a 37.5-hour work week.

4) The Permit Holder may request at any time that the MCPC review the costs of the Compliance Officer to determine whether they are reasonable or necessary. The action of the MCPC on the request shall be appealable in the same manner as action on the Conditional Use Permit.

L. SITE RECLAMATION

The Permit Holder shall submit to the MCEMD for MCEMD approval a Site Reclamation Plan within twenty-four (24) months of the commencement of firm operation of the power plant. The Plan shall include provisions requiring revegetation, grading, drainage, and maintenance. A site restoration bond in the sum of one hundred fifty thousand dollars ($150,000) or other equivalent form of security or financial assurance, naming the County as payee or beneficiary, shall be submitted with the Plan, in a form and content approved by the Mono County Counsel. The bond shall be reviewed on January 31 of each year, commencing on January 31

following submittal, to reflect changes in the Consumer Price Index, All Items, Los Angeles-Long Beach. The bond shall be released upon completion of site reclamation.

M. OTHER

1) The Permit older shall utilize a program for local ("first source") hiring to the extent practical and provided it is permissible under state and federal law and regulations.

2) The Permit Holder shall conduct all operations in compliance with applicable safety requirements and standards of Cal/OSHA and federal OSHA.

3) The Permit Holder shall construct an informational kiosk in the Casa Diablo area which describes the geothermal features of the area as a regional point of interest, and which describes how the geothermal resource is being utilized.

4) The Permit Holder shall conduct periodic visitor site tours of the project area and power plant to acquaint interested members of the public with the beneficial uses of geothermal energy resources.

5) The Permit Holder shall obtain a performance bond from the project contractor or equivalent security or other financial assurances acceptable to the MCDPW.

N. CONDITIONS RELATED TO LITIGATION

In the event that litigation is determined by the County to be necessary to enforce these conditions, the following procedures are agreed upon by the applicant and the County and shall apply in such litigation:

a) Service of summons on the Permit Holder may be made upon a local agent for service of process designated by the applicant prior to commencement of construction.

b) In any case involving equitable relief, the economic consequences to the interests described in the introductory paragraph on page one of these conditions, as a result of temperature or flow changes in the Hot Creek Hatchery and Hot Creek Gorge springs, shall be deemed equal or greater than the economic hardship or consequences to the Permit Holder should equitable relief issue.

c) The County of Mono shall be deemed to have standing to bring or participate in any action which includes, as part of all of the relief sought, the protection of the foregoing interests.

2/20/2020

triad/holmes associates
civil engineering
land surveying
mammoth lakes • bishop • redwood city

ENGINEER'S PRELIMINARY COST ESTIMATE
MAMMOTH PACIFIC MP2
RECLAMATION PLAN

Item Description	Quantity	Unit	Unit Cost		Total Cost
A. GENERAL					
MOBILIZATION incl equipment transport, employee per diem	1	LS	55,000	$	55,000
			SUBTOTAL:	$	55,000
B. EROSION CONTROL					
FILTER FENCING / STRAW WATTLE incl wattle at $0.60 per lf and labor @$25/hr	1	LS	2,000	$	2,000
EROSION CONTROL BLANKET incl. blanket @$1.10/sf and laborores @$40/hr for 34 hrs	2,653	SF	1.4	$	3,714
HYDROSEEDING incl. hydroseed and sprayer @ $0.40 per sf and two operators @20/hr ea totalling $1.50 per sf	201,523	SF	1.50	$	302,285
FINE GRADING (INC. SHAPING OF 2:1 SLOPES) w/ excavator $3,600/day (w/operator) and bulldozer @ $2,200/day for 4.5 days	1	LS	26,000	$	26,000
			SUBTOTAL:	$	307,999
C. REMOVALS:					
EQUIPMENT REMOVAL AND SALVAGE (incl. 150T crane @$3,600/day for 40 days and 50T crane @ $2,800/day for 80 days	1	LS	370,000	$	370,000
CONCRETE DEMOLITION and DISPOSAL incl. excavator and loader @ $50/cy and trucking and disposal @ $30/cy	3,377	CY	80	$	270,160
PAVING AND BASE incl. bulldozer and loader @ $50/cy and trucking and siposal @ $30/cy	2,300	CY	80	$	184,000
			SUBTOTAL:	$	824,160
			SUBTOTAL ITEMS A-C:	$	1,187,159
			20% Contingencies	$	237,432
			TOTAL:	**$**	**1,424,590**

Cost Estimate Revision date 2/20/20 by:

Thomas A. Platz, PE C41039

REGISTERED PROFESSIONAL ENGINEER
THOMAS A. PLATZ
NO. C 41039
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STATE OF CALIFORNIA

EASTERN SIERRA ENGINEERING
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11 September 2020

Kelly Karl
Associate Planner
Mono County Community Development Department
Post Office Box 2415
Mammoth Lakes, California 93546

Mammoth Pacific Unit II Cost Estimate Evaluation

Kelly:

General:
On 25 August 2020 Mono County issued a Scope of Work Letter to Eastern Sierra Engineering (ESE) under our agreement with you (Mono agreement 19-000058) for the review of a cost estimate associated with the reclamation of Mammoth Pacific Unit II geothermal site.

The work consisted of reviewing reclamation quantities based on the reclamation plan, reviewing associated costs, and reviewing other factors affecting accuracy of the estimate as well as providing an opinion of the reasonableness of the provided cost estimate.

Methodology:
The reclamation plan and cost estimate provided by the county were reviewed in order to become familiar with the scope of work covered by the cost estimate as well as general methodology used in the estimate.

Reclamation quantities were independently calculated based on site geometry and assumptions about construction of existing improvements and structures. Existing equipment capacities and work durations were reviewed, found reasonable, and generally used in development of independent estimate. A 20% contingency was used.

Salvage or scrap value of the removed equipment and materials was ignored but the potential value of removed equipment and materials could offset some of the reclamation cost.

Costs of equipment, materials, and labor involved in the work were reviewed using standard references for the construction and demolition industries.

The work was assumed to not be at prevailing wage (public construction) rates.

As shown on the attached Evaluation of Mammoth Pacific Unit II Cost Estimate we estimate the current cost of reclamation to be about $1.1 million.

Opinion:
Our estimate to reclaim Unit II is about 20% less than the about $1.4 million cost estimate provided by the county but, due to relatively large uncertainties of costs in the construction industry, also suggests that the provided cost estimate is reasonable. Depending on the purpose of the estimate, such as for advance budgeting or for bonding, we believe a value based on either or both of these estimates would be appropriate.

We appreciate this opportunity to work with the county. Let us know if you need clarification or additional information.

Sincerely,
Eastern Sierra Engineering, P.C.

David Grah
Principal Engineer

Mammoth Pacific MP2
Reclamation Plan Cost Estimate

EASTERN SIERRA ENGINEERING

Summary								
Item		Description	Quantity	Unit		Unit Cost		Total Cost
General	Mob	Trucking to and from job site, assemble/disassemble 150T Lattice Crane.	1	LS	$	55,000.00	$	55,000.00
Erosion Control	Filter Fencing		1	LS	$	2,000.00	$	2,000.00
	Erosion Control		2653	SF	$	1.40	$	3,714.20
	Hydroseeding	$0.20/sf, 5 days w/ 1 foreman, 2 laborers.	201613	SF	$	0.22	$	43,722.60
	Grading		1	LS	$	26,000.00	$	26,000.00
Removals	Structures, AC, Concrete	32,895 sf of AC @ .5' thickness, 59,617 sf of Concrete @ .75' thickness. Metal structures. 80 Days w/ 7 man crew.	1	LS	$	812,035.20	$	812,035.20

Subtotal	$	942,472.00
20% Contingencies	$	188,494.40
Total	**$**	**1,130,966.40**

Mammoth Pacific
Magma Lands including
MP-1, MP-2, M-1 Power Plants

Reclamation Plan

Project 3030.2

November 2011
Revised September 2012

Prepared for:
Mono County Energy Management Department
P.O. Box 2415
Mammoth Lakes, CA 93546

Submitted By:

Engineer:
triad/holmes associates

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Tom Platz, RCE, Principal

9-28-2012

Thomas A. Platz, P.E. C41039 Date

Mammoth Pacific MP-1, MP-2, M-1 Reclamation Plan

INDEX

APPENDIX

1. Introduction

Mammoth Pacific, LP (MPLP) is currently operating the MP-1 and MP-2 power plants, which are located in the southeast portion of the "Magma" private property in the northwest quarter of Section 32, Township 3 South, Range 28 East of the Mount Diablo Meridian.

The MP-1 plant was the first geothermal power plant to be built at the Mammoth Pacific Complex, commencing operation in 1984 under a Conditional Use Permit issued by Mono County. MP-2 geothermal plant was established in 1990 under a separate Mono County Conditional Use Permit. Ormat Nevada, Inc., the owner of MPLP, proposes to replace the existing MP-1 plant with a new, modern, efficient, and more advanced M1 generation plant. MPLP will build the new plant slightly to the east of the MP-1 site and just west of the MP-2 site as shown in the attached Plate A. The MP-1 plant will operate for up to 2 years from the date the M–1 plant begins startup operations. MPLP will close and decommission the MP-1 plant after the M-1 plant becomes commercial. Depending on the approval and construction start date of M-1, the anticipated date for the reclamation of the MP-1 plant will be in Year 2014 or 2015. The MP-2 plant full reclamation will commence in 2045. At that time the MP-1 plant site will be reclaimed through the removal of the existing power plant facilities within the site. As an interim, MP-1 site will be reused as an equipment yard to support the Mammoth Pacific operations as it is adjacent to the Mammoth Pacific offices and existing maintenance yard. The existing offices, maintenance yard, and warehouse next to the MP-1 site will remain until all geothermal operations including the PLES plant on USFS lands end power production.

Once the new M1 plant is decommissioned in 2045, the MP-1 and M-1 sites will be reclaimed as described below in Section 2 – Reclamation Plan.

Included in the reclamation will be the geothermal well sites which support the M-1, MP-1, and MP-2 plants. These wells will remain in operation until 2045. Well sites are shown on Plate B.

The end land use is identified as open space, and the site will be restored to natural site conditions.

Summary of Reclamation Plan timeframe, cost, and end land use for all geothermal sites is shown below:

	MP-1 Plant	**MP-2 Plant**	**M-1 Plant**	**Wells**
Reclamation Start Date	Year 2014 or 2015	Year 2045	Year 2045	Year 2045
Estimated Cost	$356,224	$739,513	$564,949	$2,210,719
End Land Use	Open Space and natural site conditions	Open Space and natural site conditions	Open Space and natural site conditions	Open Space and natural site conditions

The reclamation date provided for the M-1 plant and the wells are estimated dates only. Ormat plans to operate the plant and wells as long as there is the geothermal resource is available. This reclamation plan will need to be revised and approved by the County if the geothermal plant will continue operations past 2045 or if the reclamation changes due to a change in end land use.

2. Reclamation Plan

This Reclamation Plan (Plan) is subject to Planning Commission approval and prepared in compliance with Mono County General Plan requirements (Chapter *35)* and is designed to meet the reclamation requirements of the MP-1, MP-2, and M-1 plants. The reclamation techniques and methods in this Reclamation Plan are based on successful re-vegetation/reclamation programs initiated at the existing Casa Diablo Power Plants.

The reclamation plan addresses all surface disturbance created by the Project and abandonment of geothermal well sites. The geothermal wells will be sealed in accordance with the State and Mono County Environmental Health Department standards and requirements. Disturbed areas surrounding the wells will be reclaimed in the same manner as the plant sites.

In general, the reclamation plan includes measures for protecting wildlife and the public; minimizing erosion; demolishing structures; re-grading cut-and-fill slopes; re-vegetation; and providing the resumption of pre-project land uses. The reclamation goals are to reclaim the site to a stable, functioning landscape unit/ecosystem to allow for similar land uses, including wildlife habitat and dispersed and concentrated recreation, as currently exist, consistent with the Inyo National Forest Land and Resource Management Plan and the Mono County General Plan.

Wildlife Habitat

A. No federal- or state-listed threatened or endangered species are known to occupy or frequent the Project area, however, there are five species of

special concern to the Forest Service and CDFG associated with this habitat: mule deer, pine marten, northern goshawk, California spotted owl, and sage grouse. With removal of surface facilities and re-vegetation there would be no residual impacts to these species.

B. Wildlife habitat will be established on the reclaimed lands in a condition similar to the undisturbed lands surrounding the sites.

C. There are no wetlands or other surface waters located within the Project area, therefore, no wetland habitats will be impacted.

D. There are no perennial streams or other surface waters located within the Project area. A "blue line" stream is identified adjacent to the sites along the northerly boundary on the U.S. Geological Survey (USGS) topographic map ("Old Mammoth" quadrangle, 1:24000 series). The blueline stream is an ephemeral/intermittent identified as a stream "riparian conservation area" (RCA) by the USFS under the SNFPA ROD (USDA, Forest Service 2004). The stream flows southeast through the Casa Diablo geothermal development area emergency spill containment basin then draining into Mammoth Creek approximately 0.8 miles from the site.

E. A more detailed on wildlife and wildlife habitat is found in Section 3.5 Biological Resources of Draft EIR.

Backfilling, Re-grading, Slope Stability and Re-contouring

Upon completion of operations, all Project-affected areas of surface disturbance will be re-contoured as necessary to blend with the surrounding topography as soon as practicable. Final reclaimed fill slopes will not exceed 2:1 (horizontal:vertical), except where site-specific geologic and engineering analyses demonstrate that the proposed final slope will have a minimum slope stability factor of safety that is suitable for the approved end use and when the proposed final slope can be successfully re-vegetated.

A final site reclamation plan for MP-1 plan is provided on Plates 1a, 1b, and 1c, attached in Appendix A. Once facilities have been removed from the plant site minor grading to shape the existing pad to slope to the northeast and backfill of the existing retention pond will be completed. As an interim, the pad will be covered with gravel to provide a surface for vehicles that will significantly reduce erosion and runoff through percolation of rainfall and snowmelt. Existing slope on the west and south sides of the plant site will be graded at 2:1 (horizontal: vertical) down to the reshaped pad. A stormwater retention basin will be graded to intercept the 20 year, 1 inch rainfall event as part of the interim reclamation plan. The basin will be graded with 3:1 side slopes to allow animals to escape from the

basin. The fire suppression system will not be removed since it serves the existing office buildings.

As part of the final reclamation plan, gravel from the MP-1 site will be removed and the site will be re-vegetated. A retention basin will be located in the northeast corner to collect the runoff from the site graded with side slopes of 3:1 to allow animals to escape from the bottom of the basin. Final reclaimed slopes, will not exceed 2:1 (horizontal: vertical) and will conform to the surrounding topography.

A site reclamation plan for the MP-2 plant site is provided on Plates 2a and 2b, attached in Appendix A. The plant structures, piping and equipment will be removed initially including concrete foundations supporting those facilities. The concrete liner from the existing pond will be removed and the pond will be backfilled. A retention basin will be installed as shown on Plate 2b, to collect the runoff from the site. Minor grading will be required once all the facilities and paving have been removed from the plant. The site will be graded at approximately 1% toward the retention basin. The concrete lined sloped separating MP-2 site and PLES site will remain until PLES site is reclaimed. A small portion of the slope located at the northern boundary of MP-2 site will be re-graded at 2:1 (horizontal: vertical).

A site reclamation plan for the M-1 plant site is provided on Plates 3a and 3b, attached in Appendix A. Once facilities have been removed from the plant site, slopes around the site will be graded at 2:1 (horizontal: vertical). The pad will be graded to slope to the south toward the existing retention pond. Existing retention system west of the pond will be removed and another retention pond will be graded with 3:1 side slopes. The two retaining walls on the site will also be removed and a slope will be constructed at a maximum of 2:1 where the walls were located.

Re-vegetation

The natural re-vegetation and planted vegetation that has already occurred on previously disturbed areas for the existing Casa Diablo Power Plants serve as a basis for determining the plant species and topographic features necessary for successful reclamation. These methods in use already include the design and construction of stable slopes, minor re-grading, ripping or sub-soiling to de-compact and loosen compacted soil, topsoiling, surface preparation through fine grading, reseeding and re-vegetation (or natural re-vegetation).

The M-1 site will be removing approximately 39 trees. Due to the lack of irrigation water available to establish trees replacement of trees is not proposed within the reclamation plan.
Seeding of disturbed areas would be completed using the following seed mixture and application rate:

Species	Pure Live Seed (Pounds per Ac.)
Big sagebrush (Artemisia tridentata)	0.5
Antelope bitterbrush (Purshia tridentata)	4
Desert peach (Prunus andersonii)	2
Rabbitbrush (Ericameria nauseosa)	0.5
Western needlegrass *(Achnatherum occidentalis)*	2
Squirreltail *(Elymus elytnoides)*	4
Baisn wildrye (Leymus cinereus)	3

Preferably, seeds for this project would be collected within the immediate vicinity of the project area. If this is not possible due to poor seed availability, seed from the Eastern Slopes Subsection of the Sierra Nevada Section and Mono Section (Miles and Goudey 1997 — map available) would be acceptable. If availability still presents a problem, the seed mix may be modified in consultation with the Forest Service. Re-vegetation will occur in the fall to take advantage of fall and winter moisture.

The existing detention pond at MP-1 plant will be designated as a re-vegetation site to test the seed mix, shown on Plate 1B. Annual monitoring of this site will be conducted annually.

Success standards for re-vegetation are as follows:

- At least 3 shrubs and 8 perennial native grasses and/or forbs per 4 square meters would be established on site.
- Perennial grasses would account for at least 10% of the relative cover.
- All non-native weed species that are already present in the area would account for no more than 5% total of the relative cover at the end of the 2 year evaluation period. New non-native species introduced as a result of the project would be eradicated, i.e. 0% cover. Where this standard is not met, appropriate weed control measures will be implemented.
- At least 70% of trees planted. If this success rate is not achieved then supplemental irrigation may be required to establish trees.

Seeded slopes will be stabilized with erosion control blanket, such as "North American Green jt150."

The re-vegetated areas would be monitored for compliance with the success standards defined above. Barriers will be installed as necessary to prevent unauthorized vehicular traffic from interfering with the reclamation of temporary access routes or other project areas. Re-vegetated areas may be fenced to protect young plants from grazing animals.

The area shown on the M-1 reclamation plan as hot soils will not be held to the

success standards noted above as existing areas around the project site with hot soils are either void of vegetation or poorly vegetated so it is anticipated the hot soils will not revegetate.

Failure to meet the success standards would require additional planting and/or weed control, as appropriate, until standards are met.

Drainage, Diversion Structures, Waterways and Erosion Control

Stable topographic surface and drainage conditions will be established to control erosion, prevent sedimentation, blend with the surrounding landscape, and to protect on-site and downstream sites.

Surface runoff and drainage will be controlled by silt fencing or a straw wattle until the interim gravel surface for MP-1 has been placed on the pad and/or the new vegetation has been developed to a point of controlling erosion for all sites during final reclamation.

Retention basins have been designed for each site, based on the Lahontan Regional Water Quality Control Board's Water Quality Plan for the Mammoth Creek Basin to contain the runoff volume generated from a 20 year intensity storm with a one hour duration, which is assumed to be 1 inch (0.83 feet) * Area (square feet) * C (infiltration coefficient). Retention basin sizing calculations are included in Appendix B.

Prime Agricultural Reclamation

The geothermal plant sites are not located within the prime agricultural lands and, therefore, this standard does not apply to the reclamation plan.

Other Agricultural Land

The geothermal plant sites are not located within agricultural lands of any kind and, therefore, this standard does not apply to the reclamation plan.

Building, Structure and Equipment Removal

At project decommissioning, all buildings and ancillary facilities will be reclaimed by having all structures removed and taken off-site. The on-site electric systems, geothermal and fire suppression water pipelines will be removed. The foundations for the plants, asphalt pavement except for those roads which support offsite facilities, and retaining walls will be removed. All above ground pipeline structures will be removed including the pipe and supports. Plates 1a, 2a, and 3a show the existing sites and identify the facilities to be removed. The liner at the bottom of the existing retention pond at MP-1 plant, the concrete pond at MP-2, and underground retention basin at M1 site will be removed and soil will be tested for possible hydrocarbon contamination. All contaminated soils will be removed and disposed of in accordance with state and local health and safety ordinances. All

other waste to be disposed of will also be done in accordance with state and local health safety ordinances.

Stream Protection, including Surface and Groundwater

There are no perennial streams or other surface waters located within the Project area.

Topsoil Salvage, Maintenance and Redistribution

Topsoil stockpiled for the M-1 site will be spread over the site in a minimum thickness of 3 inches.

Topsoil was not stockpiled when MP-1 and MP-2 sites were graded. Therefore, the resulting surficial soils after grading will be analyzed to determine the presence or absence of elements essential for plant growth and to determine those soluble elements that may be toxic to plants, if the soil has been chemically altered or if the growth media consists of other than the native topsoil. If soil analysis suggests that fertility levels or soil constituents are inadequate to successfully implement the re-vegetation program, fertilizer or other soil amendments may be incorporated into the soil. When native plant materials are used, preference will be given to slow-release fertilizers, including mineral and organic materials that mimic natural sources, and will be added in amounts similar to those found in reference soils under natural vegetation of the type being reclaimed.

Topsoil and suitable amended surficial soils will be planted with a vegetative cover or will be protected by other equally effective measures to prevent water and wind erosion and to discourage weeds.

Tailing and Waste Management

Geothermal drilling waste and cuttings shall be disposed of in a manner approved by the Lahontan Regional Water Quality Control Board and/or Mono County Environmental Health.

Closure of Surface Openings

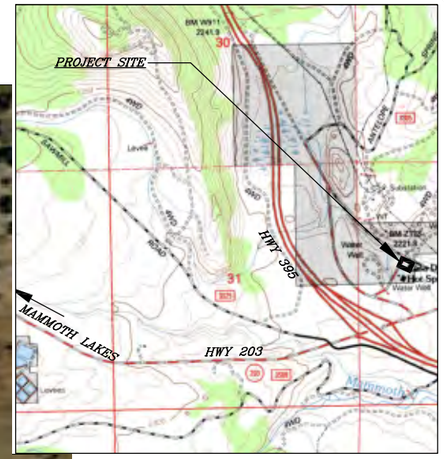
Wells will be plugged in accordance with the State laws and regulations. Plugged wells will be protected from public entry in order to eliminate any threat to public safety and to preserve access for wildlife habitat.

3. Inspections

A request for annual inspection will be submitted to the Mono County Compliance Officer once each calendar year until construction activities are completed, resuming again once abandonment activities commence. Requests for annual inspections will be accompanied by a written report prepared by a qualified professional who identifies to what extent the reclamation at the site conforms or deviates from the approved reclamation plan.

Reclamation Plan
Mammoth Pacific
MP-1, MP-2, M-1 Power Plants

APPENDIX A
Plates



VICINITY MAP
NOT TO SCALE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

tha
triad/holmes assoc
civil engineering
land surveying

MAMMOTH LAKES
BISHOP
REDWOOD CITY
SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

REVISIONS:	BY:

PREPARED FOR:

ORMAT

MAMMOTH GEOTHERMAL PLANTS

RECLAMATION SITE PLAN

MAMMOTH LAKES, CA.

DATE 07/06/11
SCALE AS SHOWN
DRAWN MP
JOB NO. 3030.2
PLATE A
SHEET 1 OF 9

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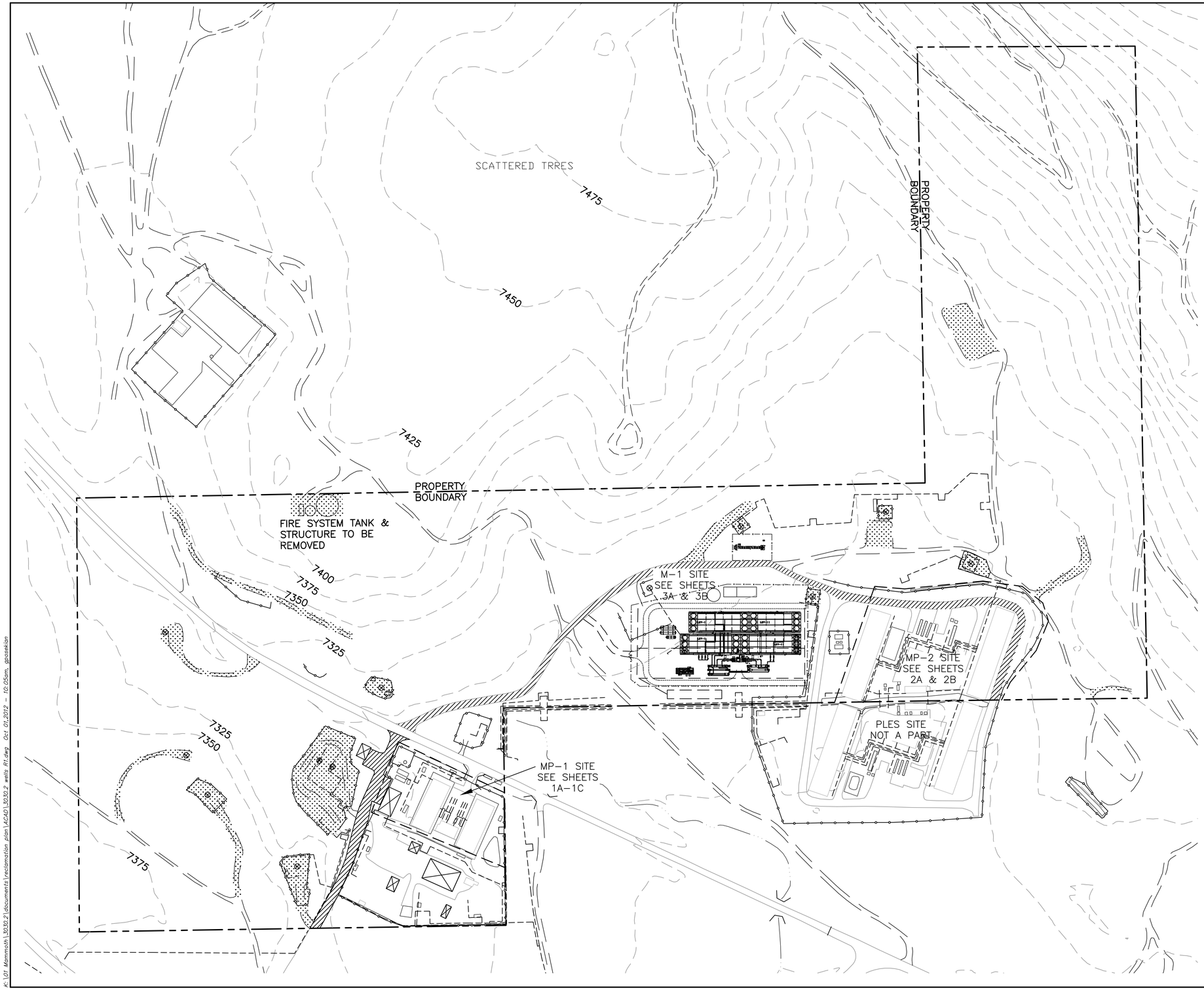

NOTE:
THIS RECLAMATION PLAN WAS PREPARED BASED ON THE TERMINATION OF ALL GEOTHERMAL POWER GENERATING OPERATIONS WHEN, AT THAT TIME, RESTORATION OF THE SITE TO A FINAL PROPERTY END USE OF OPEN SPACE WILL OCCUR. IF OFFSITE GEOTHERMAL POWER GENERATION CONTINUES (PLES POWER FACILITY) WHEN ONSITE POWER GENERATION OPERATIONS CEASE, THEN THE OFFICE, MAINTENANCE YARD AND ACCESS ROADS WILL REMAIN IN OPERATION UNTIL THOSE OFFSITE FACILITIES ARE SHUT DOWN. IF AT ANYTIME DURING CONTINUING OPERATION OF THE FACILITIES A DIFFERENT END USE IS DETERMINED TO BE MORE FEASIBLE THAN OPEN SPACE THE OPERATORS OF THE PLANT HAVE THE RIGHT TO MODIFY THIS RECLAMATION PLAN IN CONFORMANCE WITH MONO COUNTY REQUIREMENTS.

LEGEND

- AC PAVING TO BE REMOVED AND ROAD BASE TO REMAIN FOR SITE MONITORING PURPOSES.
- STRUCTURE TO BE REMOVED
- INJECTION OR PRODUCTION WELL TO BE DESTROYED WITH PIPING REMOVED AND PAD HYDROSEEDED
- FENCE TO BE REMOVED
- PIPELINE TO BE REMOVED
- PROPERTY BOUNDARY
- EXISTING DIRT ROAD
- WELL PAD & ACCESS ROAD TO BE HYDROSEEDED

NOT TO SCALE

tha
triad/holmes assoc.
civil engineering
land surveying
MAMMOTH LAKES
BISHOP
REDWOOD CITY
SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

REVISIONS:	BY:

PREPARED FOR:

ORMAT

MAMMOTH GEOTHERMAL WELL SITES

RECLAMATION SITE PLAN

MAMMOTH LAKES, CA.

DATE	10/01/12
SCALE	AS SHOWN
DRAWN	MF
JOB NO.	3030.2
PLATE	B
SHEET	2 OF 9

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OLD HIGHWAY

OHU

OHU

OHU

OHU

24"CULVERT

EXISTING FENCE

CONC HEADWALL

INLET AND PIPING TO BE REMOVED

SHED

CONCRETE VAULT TO BE REMOVED

FIRE SUPPRESION SYSTEM INCLUDING PIPING AND HYDRANTS

LIMIT OF AC REMOVAL

SHED TO BE REMOVED

SOUTH BOUNDARY MAGMA LEASE

GEOTHERMAL PLANT MP-1

ABOVE GROUND WATER LINE

SHED TO BE REMOVED

REMOVE LINER AND BACKFILL POND WATER LEVEL = 7291.0

PIPE LINE

AC PAVEMENT TO BE REMOVED

EXISTING RETAINING WALL TO BE REMOVED

SHED TO BE REMOVED

PIPE LINE TO REMAIN

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

RECLAMATION NOTES:

ALL STRUCTURES, INCLUDING FOUNDATIONS, SURFACE AND SUBSURFACE UTILITIES AND DRAINAGE PIPING ARE TO BE REMOVED AND SALVAGED PER THIS RECLAMATION PLAN

LIMITS OF DISTURBANCE (AREA TO BE RECLAIMED)

tha
triad/holmes assoc
civil engineering
land surveying

MAMMOTH LAKES
BISHOP
REDWOOD CITY
SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

REVISIONS:	BY:

PREPARED FOR:

ORMAT

MAMMOTH GEOTHERMAL PLANT MP-1

RECLAMATION SITE PLAN

MAMMOTH LAKES, CA.

DATE 05/12/11

SCALE AS SHOWN

DRAWN TP / GP

JOB NO. 3030.2

PLATE 1A

SHEET 3 OF 9

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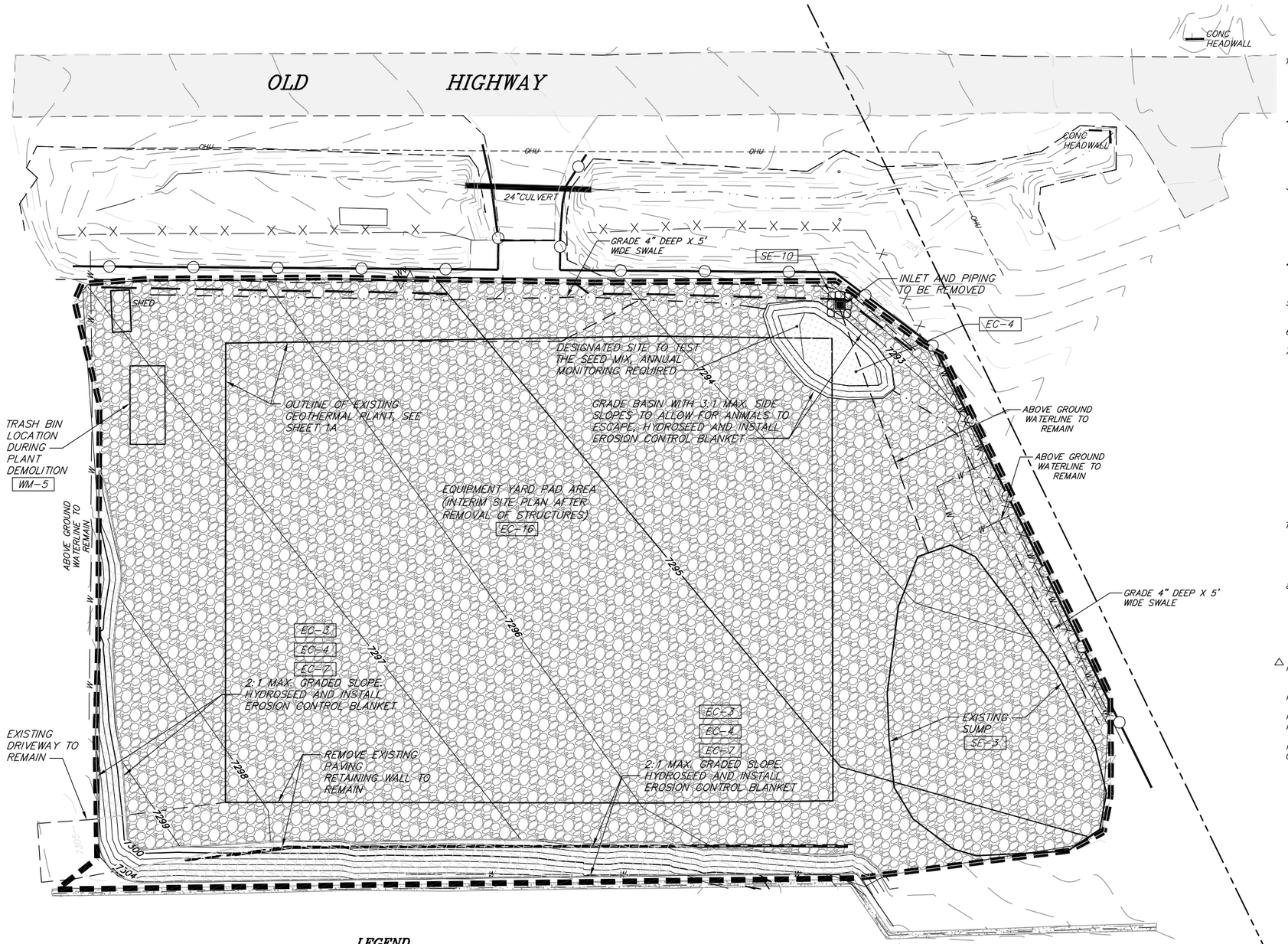

LEGEND

(EXISTING ITEM)

- (PROPERTY LINE)
- (EDGE OF PAVEMENT)
- (FENCE)
- 7285 (EXISTING GROUND CONTOUR & ELEV.)
- (FIRE HYDRANT)
- WV (WATER VALVE RISER)
- (AC PAVEMENT)
- (RETAINING WALL)
- (CONCRETE VALLEY GUTTER)
- (CONCRETE CURB WALL)
- W (WATERLINE)
- OHU (OVERHEAD UTILITIES)
- (POWER POLE)
- SEED MIX TESTING SITE
- FILTER FENCE PER DETAIL SHT 2.
- 7295 FINISHED GROUND CONTOUR & ELEV.
- ¾"GRAVEL, 2" THICK OVER COMPACTED NATIVE MATERIAL–TO BE PLACED AFTER DEMO
- HYDROSEED AND INSTALL EROSION CONTROL BLANKET
- LIMITS OF DISTURBANCE–ALL EXISTING ITEMS WITHIN L.O.D. ARE TO BE REMOVED (UNLESS OTHERWISE NOTED)

CASQA BMP'S TO BE IMPLEMENTED

EC-3	HYDRAULIC MULCH
EC-4	HYDROSEEDING
EC-7	GEOTEXTILES AND MATS. USE NORTH AMERICAN GREEN SC150BN JUTE MAT
EC-16	NON VEGETATIVE STABILIZATION (GRAVEL MULCH)
SE-3	SEDIMENT TRAP
SE-10	STORM DRAIN INLET PROTECTION
WM-5	SOLID WASTE MANAGEMENT

GRADING AND SITEWORK SPECIFICATIONS:

1. CONTRACTOR SHALL TAKE ALL SUCH MEASURES NECESSARY TO CONTROL DUST IN CONSTRUCTION AREAS OR ON ACCESS ROADS. SUFFICIENT WATER TRUCKS SHALL BE MADE AVAILABLE FOR DUST CONTROL PURPOSES. ALL EXPOSED SOIL SURFACES SHALL BE MOISTENED AS REQUIRED TO AVOID NUISANCE CONDITIONS AND INCONVENIENCES FOR LOCAL RESIDENTS AND TRAVELERS OF NEARBY ROADWAYS.
2. CONTRACTOR SHALL CONDUCT ALL GRADING OPERATIONS IN CONFORMANCE WITH THE CONSTRUCTION SAFETY ORDERS OF THE STATE OF CALIFORNIA, DEPARTMENT OF INDUSTRIAL RELATIONS, DIVISION OF INDUSTRIAL SAFETY. IN ADDITION, CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF GENERAL OSHA STANDARDS FOR THE PROTECTION OF WORKMEN AND THE GENERAL PUBLIC. OSHA PERMITS REQUIRED FOR DEEP TRENCHES.
3. ANY EARTH MATERIAL IMPORTED OR EXCAVATED ON THE PROPERTY MAY BE UTILIZED IN THE FILL, PROVIDED THAT EACH MATERIAL HAS BEEN DETERMINED TO BE SUITABLE BY THE GEOTECHNICAL ENGINEER. ALL FILL SHALL BE FREE OF ORGANIC AND OTHER DELETERIOUS MATERIAL. SOILS OF POOR GRADATION, EXPANSION POTENTIAL, OR STRENGTH CHARACTERISTICS SHALL BE PLACED IN AREAS DESIGNATED BY THE CONSULTANT OR SHALL BE MIXED WITH OTHER SOILS TO SERVICE AS SATISFACTORY SOIL MATERIAL.
4. THE CONTRACTOR SHALL CONSTRUCT THE INTERIM EROSION CONTROL AND ADHERE TO THE LAHONTAN GUIDELINES FOR EROSION CONTROL FOR THE MONO COUNTY AS SPECIFIED ON PLANS AND SPECIFICATIONS.
5. ALL SITE WORK SHALL BE COMPLETED PRIOR TO OCT 15 OF EACH YEAR. ANY WORK PROPOSED AFTER THIS DATE REQUIRES WRITTEN APPROVAL BY THE ENGINEER.
6. CONTRACTOR SHALL NOT WORK DURING TIMES THAT RAINSTORMS ARE EXPECTED.
7. WITH THE EXCEPTION OF TEMPORARY EXCAVATION FOR MASS GRADING AND AREAS SHOWN TO BE LANDSCAPED, CUT AND FILL SLOPES SHALL NOT EXCEED A STEEPNESS OF 2:1, UNLESS OTHERWISE NOTED, AND SHALL BE REVEGETATED TO CONTROL EROSION. STOCKPILED TOPSOIL WILL BE SPREAD EVENLY TO A DEPTH OF 6" MINIMUM OVER SLOPES & DISTURBED AREAS & SEEDED TO PREVENT EROSION WITH THE FOLLOWING MIXTURE:

SPECIES	PURE LIVE SEED (POUNDS PER AC.)
BIG SAGEBRUSH (ARTEMISIA TRIDENTATA)	0.5
ANTELOPE BITTERBRUSH (PURSHIA TRIDENTATA)	4
RABBITBRUSH (ERICAMERIA NAUSEOSA)	0.5
DESERT PEACH (PRUNUS ANDERSONII)	2
WESTERN NEEDLEGRASS (ACHNATHERUM OCCIDENTALIS)	2
BASIN WILDRYE (LEYMUS CONEREUS)	3
SQUIRRELTAIL GRASS (ELYMUS ELYTNOIDES)	4
TOTAL:	16.0

SEEDED SLOPES SHALL BE STABILIZED BY INSTALLATION OF AN EROSION CONTROL BLANKET, "NORTH AMERICAN GREEN SC150BN JUTE MATTING" OR APPROVED EQUAL, SECURED PER MANUFACTURER'S RECOMMENDATIONS.

8. FILL MATERIAL SHALL BE PLACED IN LIFTS SUCH THAT ALL FILL IS COMPACTED TO A MINIMUM OF 90% OF THE MATERIAL'S MAXIMUM DRY DENSITY. EXISTING SLOPES OF 5:1 OR STEEPER TO RECEIVE FILL SHALL BE KEYED WITH EQUIPMENT–WIDTH BENCHES PRIOR TO COMPACTION AND FILL PLACEMENT.

△ NOTE:

EXISTING DRAIN INLET, PIPING AND SUMP TO REMAIN UNTIL ALL THE EXISTING POWER PLANT STRUCTURE, FOUNDATIONS AND PAVING IS COMPLETELY REMOVED.

REMOVE EXISTING STORM DRAIN SYSTEM, BACKFILL SUMP AND EXCAVATE PERMANENT RETENTION BASIN AND INSTALL 3/4" ROCK SURFACE DURING SUMMER MONTHS ONLY.

NO PERMANENT SOLID WASTE OR HAZARDOUS WASTE CONTAINERS WILL BE STORED OR USED ON–SITE. CLEANING AND FUELING OF EQUIPMENT WILL NOT OCCUR ON THE SITE.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

triad/holmes assoc
civil engineering
land surveying
MAMMOTH LAKES
BISHOP
REDWOOD CITY
SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

REVISIONS:	BY:
△	SR

PREPARED FOR:

ORMAT

MAMMOTH GEOTHERMAL PLANT MP-1

INTERIM RECLAMATION SITE STORM WATER POLLUTION PREVENTION PLAN

MAMMOTH LAKES, CA.

DATE 10/12/11
SCALE AS SHOWN
DRAWN TP / GP / MF
JOB NO. 3030.2
PLATE 1B
SHEET 4 OF 9

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CONSTRUCTION LEGEND

(EXISTING ITEM)

- (PROPERTY LINE)
- (EDGE OF PAVEMENT)
- (FENCE)
- 7285 (EXISTING GROUND CONTOUR & ELEV.)
- (FIRE HYDRANT)
- WV (WATER VALVE RISER)
- (AC PAVEMENT)
- (RETAINING WALL)
- (CONCRETE VALLEY GUTTER)
- (CONCRETE CURB WALL)
- (DRAIN INLET)
- W (WATERLINE)
- OHU (OVERHEAD UTILITIES)
- (POWER POLE)
- 7295 FINISHED GROUND CONTOUR & ELEV.
- HYDROSEED TO BE PLACED INSTEAD OF GRAVEL

GRADING AND SITEWORK SPECIFICATIONS:

1. CONTRACTOR SHALL TAKE ALL SUCH MEASURES NECESSARY TO CONTROL DUST IN CONSTRUCTION AREAS OR ON ACCESS ROADS. SUFFICIENT WATER TRUCKS SHALL BE MADE AVAILABLE FOR DUST CONTROL PURPOSES. ALL EXPOSED SOIL SURFACES SHALL BE MOISTENED AS REQUIRED TO AVOID NUISANCE CONDITIONS AND INCONVENIENCES FOR LOCAL RESIDENTS AND TRAVELERS OF NEARBY ROADWAYS.
2. CONTRACTOR SHALL CONDUCT ALL GRADING OPERATIONS IN CONFORMANCE WITH THE CONSTRUCTION SAFETY ORDERS OF THE STATE OF CALIFORNIA, DEPARTMENT OF INDUSTRIAL RELATIONS, DIVISION OF INDUSTRIAL SAFETY. IN ADDITION, CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF GENERAL OSHA STANDARDS FOR THE PROTECTION OF WORKMEN AND THE GENERAL PUBLIC. OSHA PERMITS REQUIRED FOR DEEP TRENCHES.
3. ANY EARTH MATERIAL IMPORTED OR EXCAVATED ON THE PROPERTY MAY BE UTILIZED IN THE FILL, PROVIDED THAT EACH MATERIAL HAS BEEN DETERMINED TO BE SUITABLE BY THE GEOTECHNICAL ENGINEER. ALL FILL SHALL BE FREE OF ORGANIC AND OTHER DELETERIOUS MATERIAL. SOILS OF POOR GRADATION, EXPANSION POTENTIAL, OR STRENGTH CHARACTERISTICS SHALL BE PLACED IN AREAS DESIGNATED BY THE CONSULTANT OR SHALL BE MIXED WITH OTHER SOILS TO SERVICE AS SATISFACTORY SOIL MATERIAL.
4. THE CONTRACTOR SHALL CONSTRUCT THE INTERIM EROSION CONTROL AND ADHERE TO THE LAHONTAN GUIDELINES FOR EROSION CONTROL FOR THE MONO COUNTY AS SPECIFIED ON PLANS AND SPECIFICATIONS.
5. ALL SITE WORK SHALL BE COMPLETED PRIOR TO OCT 15 OF EACH YEAR. ANY WORK PROPOSED AFTER THIS DATE REQUIRES WRITTEN APPROVAL BY THE ENGINEER.
6. CONTRACTOR SHALL NOT WORK DURING TIMES THAT RAINSTORMS ARE EXPECTED.
7. WITH THE EXCEPTION OF TEMPORARY EXCAVATION FOR MASS GRADING AND AREAS SHOWN TO BE LANDSCAPED, CUT AND FILL SLOPES SHALL NOT EXCEED A STEEPNESS OF 2:1, UNLESS OTHERWISE NOTED, AND SHALL BE REVEGETATED TO CONTROL EROSION. STOCKPILED TOPSOIL WILL BE SPREAD EVENLY TO A DEPTH OF 6" MINIMUM OVER SLOPES & DISTURBED AREAS & SEEDED TO PREVENT EROSION WITH THE FOLLOWING MIXTURE:

SPECIES	PURE LIVE SEED (POUNDS PER AC.)
BIG SAGEBRUSH (ARTEMISIA TRIDENTATA)	0.5
ANTELOPE BITTERBRUSH (PURSHIA TRIDENTATA)	4
DESERT PEACH (PRUNUS ANDERSONII)	2
INDIAN RICEGRASS (ACHNATHERUM OCCIDENTALIS)	2
WESTERN NEEDLEGRASS (ACHNATHERUM OCCIDENTALIS)	2
SQUIRRELTAIL (ELYMUS ELYTNOIDES)	3
SPURRED LUPINE (LUPINUS ARGENTEUS VAR. HETERANTHUS)	2
CHICALOTE, PRICKLY POPPY (ARGENIONE MUNITE)	1
TOTAL:	16.5

SEEDED SLOPES SHALL BE STABILIZED BY INSTALLATION OF AN EROSION CONTROL BLANKET, "NORTH AMERICAN GREEN SC150" OR APPROVED EQUAL, SECURED PER MANUFACTURER'S RECOMMENDATIONS.

8. FILL MATERIAL SHALL BE PLACED IN LIFTS SUCH THAT ALL FILL IS COMPACTED TO A MINIMUM OF 90% OF THE MATERIAL'S MAXIMUM DRY DENSITY. EXISTING SLOPES OF 5:1 OR STEEPER TO RECEIVE FILL SHALL BE KEYED WITH EQUIPMENT–WIDTH BENCHES PRIOR TO COMPACTION AND FILL PLACEMENT.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

triad/holmes assoc
civil engineering
land surveying

MAMMOTH LAKES
BISHOP
REDWOOD CITY
SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE: _____

REVISIONS:	BY:

PREPARED FOR:

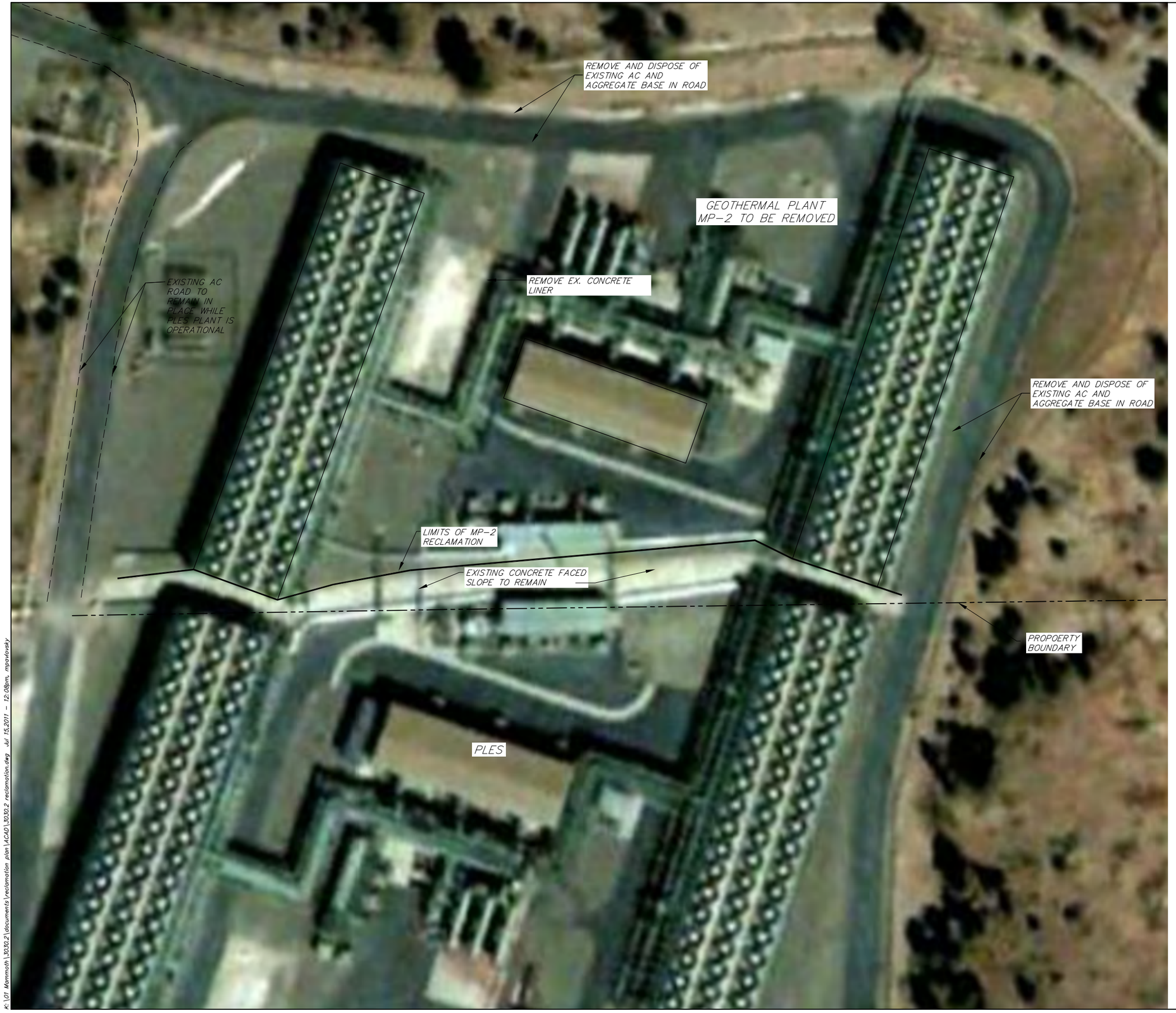
ORMAT

MAMMOTH GEOTHERMAL PLANT MP–1

LANDSCAPING SITE PLAN

MAMMOTH LAKES, CA.

DATE 10/01/12
SCALE AS SHOWN
DRAWN TP / GP / MF
JOB NO. 3030.2
PLATE 1C
SHEET 5 OF 9



RECLAMATION NOTES:

ALL STRUCTURES, INCLUDING FOUNDATIONS, SURFACE AND SUBSURFACE UTILITIES AND DRAINAGE PIPING ARE TO BE REMOVED AND SALVAGED PER THIS RECLAMATION PLAN

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

tha
triad/holmes assoc
civil engineering
land surveying
MAMMOTH LAKES
BISHOP
REDWOOD CITY
SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

REVISIONS:	BY:

PREPARED FOR:

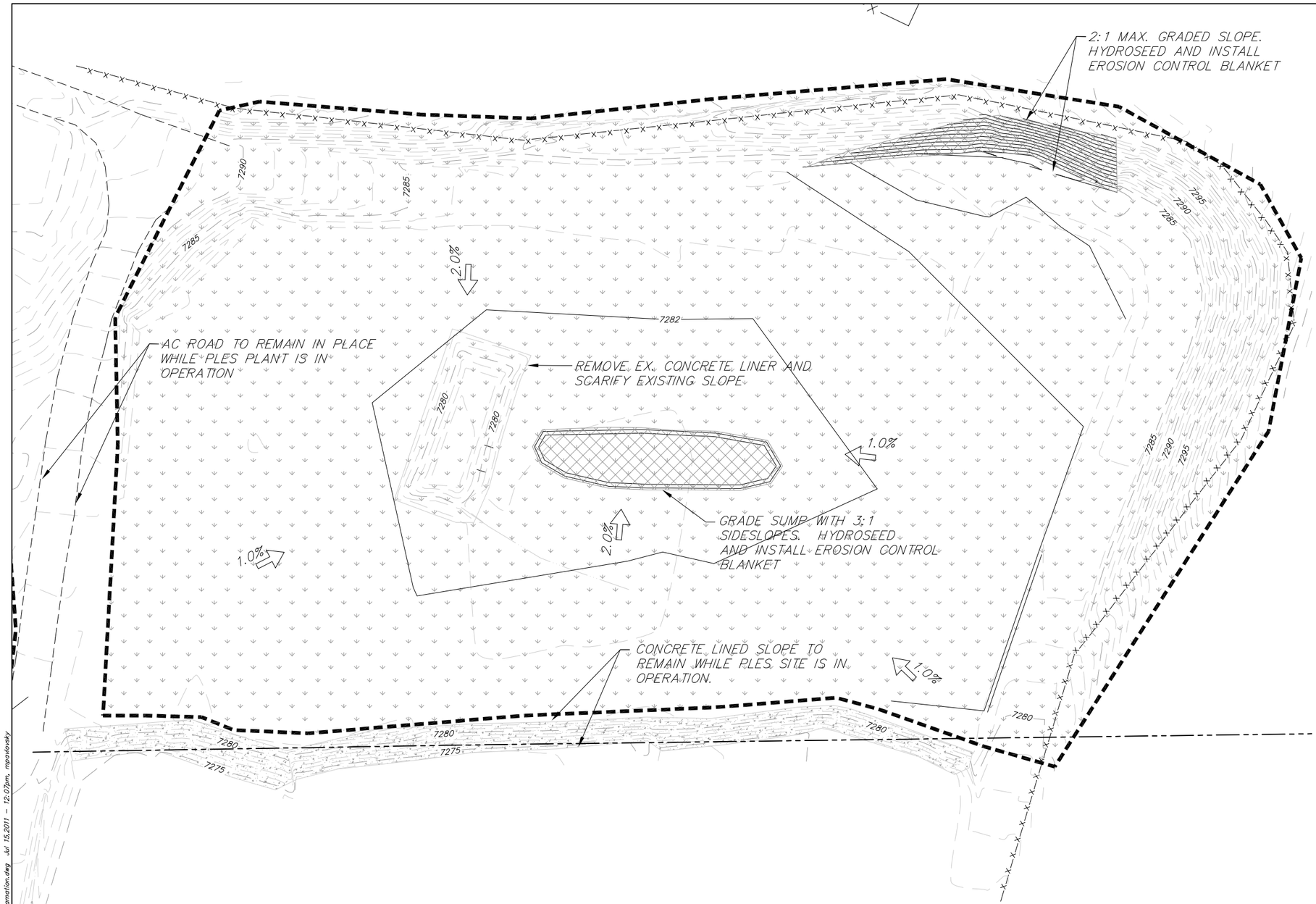
ORMAT

MAMMOTH GEOTHERMAL PLANT MP-2

RECLAMATION SITE PLAN

MAMMOTH LAKES, CA.

DATE	05/12/11
SCALE	AS SHOWN
DRAWN	TP / GP / MF
JOB NO.	3030.2
PLATE	2A
SHEET	6 OF 9



GRADING AND SITEWORK SPECIFICATIONS:

1. CONTRACTOR SHALL TAKE ALL SUCH MEASURES NECESSARY TO CONTROL DUST IN CONSTRUCTION AREAS OR ON ACCESS ROADS. SUFFICIENT WATER TRUCKS SHALL BE MADE AVAILABLE FOR DUST CONTROL PURPOSES. ALL EXPOSED SOIL SURFACES SHALL BE MOISTENED AS REQUIRED TO AVOID NUISANCE CONDITIONS AND INCONVENIENCES FOR LOCAL RESIDENTS AND TRAVELERS OF NEARBY ROADWAYS.
2. CONTRACTOR SHALL CONDUCT ALL GRADING OPERATIONS IN CONFORMANCE WITH THE CONSTRUCTION SAFETY ORDERS OF THE STATE OF CALIFORNIA, DEPARTMENT OF INDUSTRIAL RELATIONS, DIVISION OF INDUSTRIAL SAFETY. IN ADDITION, CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF GENERAL OSHA STANDARDS FOR THE PROTECTION OF WORKMEN AND THE GENERAL PUBLIC. OSHA PERMITS REQUIRED FOR DEEP TRENCHES.
3. ANY EARTH MATERIAL IMPORTED OR EXCAVATED ON THE PROPERTY MAY BE UTILIZED IN THE FILL, PROVIDED THAT EACH MATERIAL HAS BEEN DETERMINED TO BE SUITABLE BY THE GEOTECHNICAL ENGINEER. ALL FILL SHALL BE FREE OF ORGANIC AND OTHER DELETERIOUS MATERIAL. SOILS OF POOR GRADATION, EXPANSION POTENTIAL, OR STRENGTH CHARACTERISTICS SHALL BE PLACED IN AREAS DESIGNATED BY THE CONSULTANT OR SHALL BE MIXED WITH OTHER SOILS TO SERVICE AS SATISFACTORY SOIL MATERIAL.
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6. CONTRACTOR SHALL NOT WORK DURING TIMES THAT RAINSTORMS ARE EXPECTED.
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SPECIES
PURE LIVE SEED

(POUNDS PER AC.)
BIG SAGEBRUSH (ARTEMISIA TRIDENTATA)
0.5
ANTELOPE BITTERBRUSH (PURSHIA TRIDENTATA)
4
DESERT PEACH (PRUNUS ANDERSONII)
2
INDIAN RICEGRASS (ACHNATHERUM OCCIDENTALIS)
2
WESTERN NEEDLEGRASS (ACHNATHERUM OCCIDENTALIS)
2
SQUIRRELTAIL (ELYMUS ELYTNOIDES)
3
SPURRED LUPINE (LUPINUS ARGENTEUS VAR. HETERANTHUS)
2
CHICALOTE, PRICKLY POPPY (ARGENIONE MUNITE)
1

TOTAL:
16.5

SEEDED SLOPES SHALL BE STABILIZED BY INSTALLATION OF AN EROSION CONTROL BLANKET, "NORTH AMERICAN GREEN SC150" OR APPROVED EQUAL, SECURED PER MANUFACTURER'S RECOMMENDATIONS.

8. FILL MATERIAL SHALL BE PLACED IN LIFTS SUCH THAT ALL FILL IS COMPACTED TO A MINIMUM OF 90% OF THE MATERIAL'S MAXIMUM DRY DENSITY. EXISTING SLOPES OF 5:1 OR STEEPER TO RECEIVE FILL SHALL BE KEYED WITH EQUIPMENT-WIDTH BENCHES PRIOR TO COMPACTION AND FILL PLACEMENT.

LEGEND

- (PROPERTY LINE)
- (EDGE OF PAVEMENT)
- (FENCE)
- 7285 (EXISTING GROUND CONTOUR & ELEV.)
- (RETAINING WALL)
- (CONCRETE VALLEY GUTTER)
- (CONCRETE CURB WALL)
- W (WATERLINE)
- HYDROSEED
- FILTER FENCE PER DETAIL SHT 2.
- LIMITS OF DISTURBANCE-ALL EXISTING ITEMS WITHIN L.O.D. ARE TO BE REMOVED (UNLESS OTHERWISE NOTED)
- 7295 (FUTURE GROUND CONTOUR & ELEV.)
- HYDROSEED AND INSTALL EROSION CONTROL BLANKET

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

REVISIONS:	BY:

PREPARED FOR:

ORMAT

MAMMOTH GEOTHERMAL PLANT MP-2

RECLAMATION SITE PLAN

MAMMOTH LAKES, CA.

DATE 05/12/11
SCALE AS SHOWN
DRAWN TP / GP/ MF
JOB NO. 3030.2
PLATE 2B
SHEET 7 OF 9

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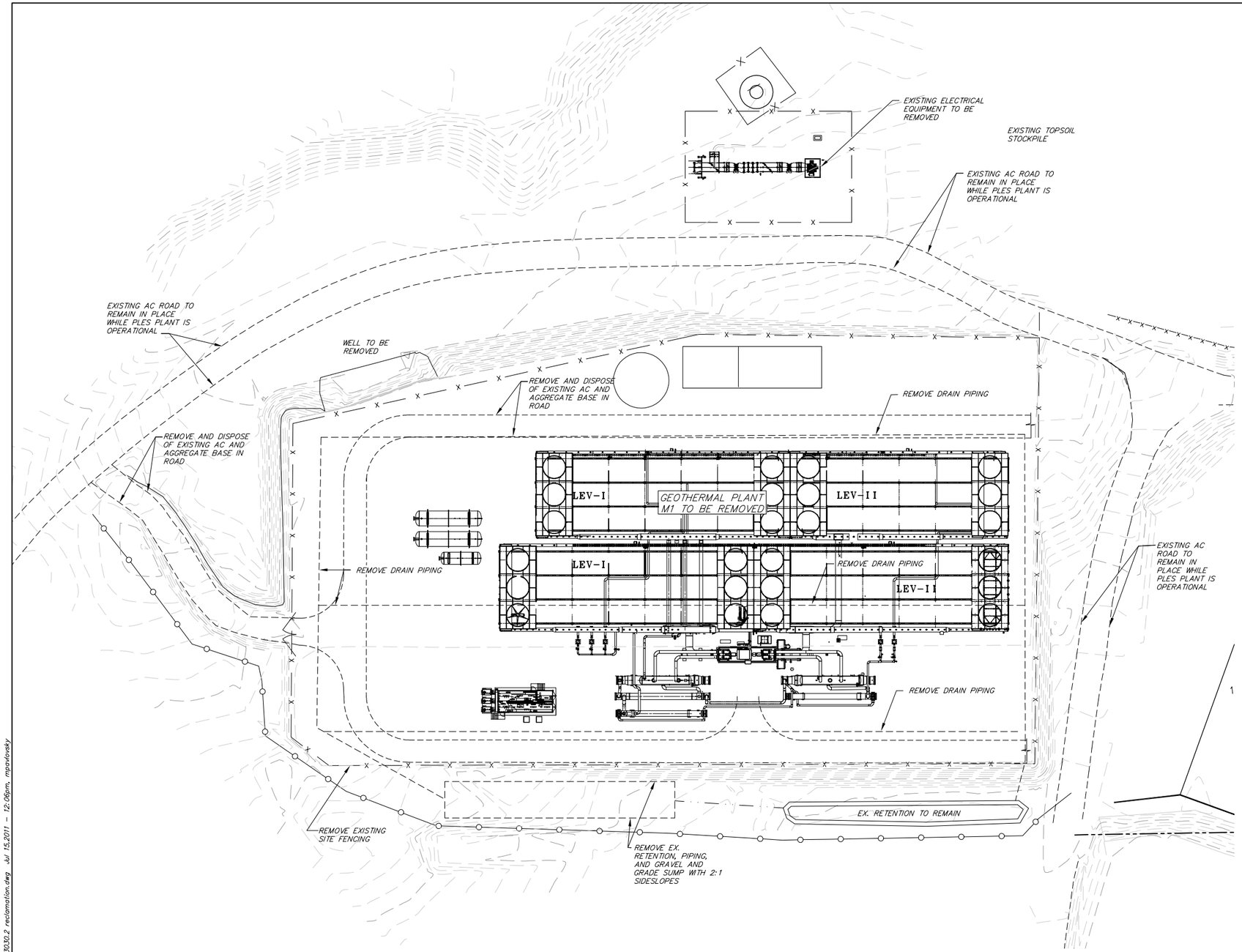
RECLAMATION NOTES:

ALL STRUCTURES, INCLUDING FOUNDATIONS, SURFACE AND SUBSURFACE UTILITIES AND DRAINAGE PIPING ARE TO BE REMOVED AND SALVAGED PER THIS RECLAMATION PLAN



CONSTRUCTION LEGEND

- (PROPERTY LINE)
- (EDGE OF PAVEMENT)
- (FENCE)
- (FIRE HYDRANT)
- (WATER VALVE RISER)
- (AC PAVEMENT)
- 7285 (EXISTING GROUND CONTOUR & ELEV.)
- (RETAINING WALL)
- (CONCRETE VALLEY GUTTER)
- (CONCRETE CURB WALL)
- W (WATERLINE)
- OHU (OVERHEAD UTILITIES)
- (POWER POLE)
- FILTER FENCE PER DETAIL SHT 2.
- 7295 FINISHED GROUND CONTOUR & ELEV.
- LIMITS OF DISTURBANCE—ALL EXISTING ITEMS WITHIN L.O.D. ARE TO BE REMOVED (UNLESS OTHERWISE NOTED)

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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DATE:

REVISIONS:	BY:

PREPARED FOR:

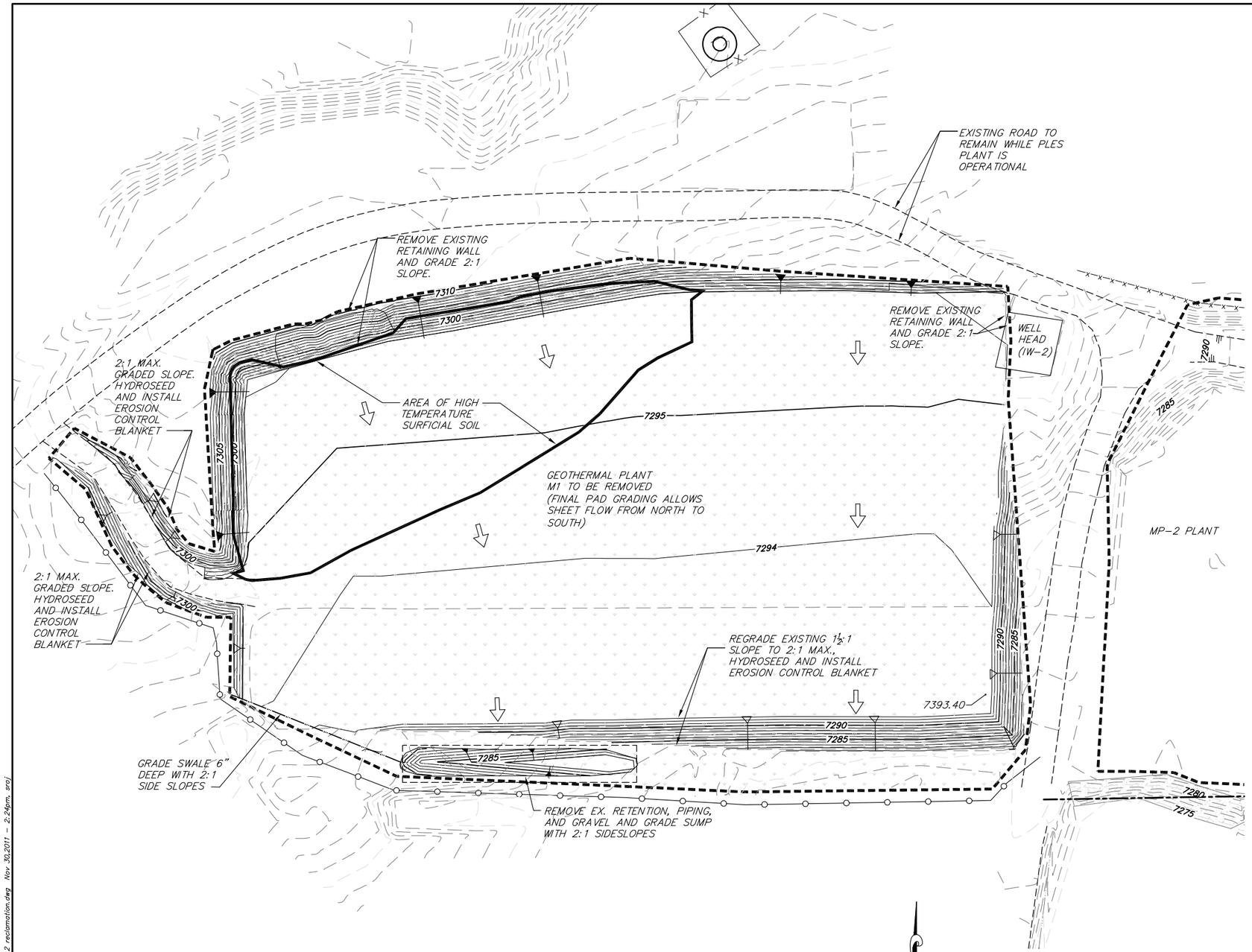
ORMAT

MAMMOTH GEOTHERMAL PLANT M1

RECLAMATION SITE PLAN

MAMMOTH LAKES, CA.

DATE 05/12/11
SCALE AS SHOWN
DRAWN TP / MF
JOB NO. 3030.2
PLATE 3A
SHEET 8 OF 9



GRADING AND SITEWORK SPECIFICATIONS:

1. CONTRACTOR SHALL TAKE ALL SUCH MEASURES NECESSARY TO CONTROL DUST IN CONSTRUCTION AREAS OR ON ACCESS ROADS. SUFFICIENT WATER TRUCKS SHALL BE MADE AVAILABLE FOR DUST CONTROL PURPOSES. ALL EXPOSED SOIL SURFACES SHALL BE MOISTENED AS REQUIRED TO AVOID NUISANCE CONDITIONS AND INCONVENIENCES FOR LOCAL RESIDENTS AND TRAVELERS OF NEARBY ROADWAYS.
2. CONTRACTOR SHALL CONDUCT ALL GRADING OPERATIONS IN CONFORMANCE WITH THE CONSTRUCTION SAFETY ORDERS OF THE STATE OF CALIFORNIA, DEPARTMENT OF INDUSTRIAL RELATIONS, DIVISION OF INDUSTRIAL SAFETY. IN ADDITION, CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF GENERAL OSHA STANDARDS FOR THE PROTECTION OF WORKMEN AND THE GENERAL PUBLIC. OSHA PERMITS REQUIRED FOR DEEP TRENCHES.
3. ANY EARTH MATERIAL IMPORTED OR EXCAVATED ON THE PROPERTY MAY BE UTILIZED IN THE FILL, PROVIDED THAT EACH MATERIAL HAS BEEN DETERMINED TO BE SUITABLE BY THE GEOTECHNICAL ENGINEER. ALL FILL SHALL BE FREE OF ORGANIC AND OTHER DELETERIOUS MATERIAL. SOILS OF POOR GRADATION, EXPANSION POTENTIAL, OR STRENGTH CHARACTERISTICS SHALL BE PLACED IN AREAS DESIGNATED BY THE CONSULTANT OR SHALL BE MIXED WITH OTHER SOILS TO SERVICE AS SATISFACTORY SOIL MATERIAL.
4. THE CONTRACTOR SHALL CONSTRUCT THE INTERIM EROSION CONTROL AND ADHERE TO THE LAHONTAN GUIDELINES FOR EROSION CONTROL FOR THE MONO COUNTY AS SPECIFIED ON PLANS AND SPECIFICATIONS.
5. ALL SITE WORK SHALL BE COMPLETED PRIOR TO OCT 15 OF EACH YEAR. ANY WORK PROPOSED AFTER THIS DATE REQUIRES WRITTEN APPROVAL BY THE ENGINEER.
6. CONTRACTOR SHALL NOT WORK DURING TIMES THAT RAINSTORMS ARE EXPECTED.
7. WITH THE EXCEPTION OF TEMPORARY EXCAVATION FOR MASS GRADING AND AREAS SHOWN TO BE LANDSCAPED, CUT AND FILL SLOPES SHALL NOT EXCEED A STEEPNESS OF 2:1, UNLESS OTHERWISE NOTED, AND SHALL BE REVEGETATED TO CONTROL EROSION. STOCKPILED TOPSOIL WILL BE SPREAD EVENLY TO A DEPTH OF 6" MINIMUM OVER SLOPES & DISTURBED AREAS & SEEDED TO PREVENT EROSION WITH THE FOLLOWING MIXTURE:

SPECIES	PURE LIVE SEED (POUNDS PER AC.)
BIG SAGEBRUSH (ARTEMISIA TRIDENTATA)	0.5
ANTELOPE BITTERBRUSH (PURSHIA TRIDENTATA)	4
RABBITBRUSH (ERICAMERIA NAUSEOSA)	0.5
DESERT PEACH (PRUNUS ANDERSONII)	2
WESTERN NEEDLEGRASS (ACHNATHERUM OCCIDENTALIS)	2
BASIN WILDRYE (LEYMUS CONEREUS)	3
SQUIRRELTAIL GRASS (ELYMUS ELYTNOIDES)	4
TOTAL:	16.0

SEEDED SLOPES SHALL BE STABILIZED BY INSTALLATION OF AN EROSION CONTROL BLANKET, "NORTH AMERICAN GREEN SC150" OR APPROVED EQUAL, SECURED PER MANUFACTURER'S RECOMMENDATIONS.

8. FILL MATERIAL SHALL BE PLACED IN LIFTS SUCH THAT ALL FILL IS COMPACTED TO A MINIMUM OF 90% OF THE MATERIAL'S MAXIMUM DRY DENSITY. EXISTING SLOPES OF 5:1 OR STEEPER TO RECEIVE FILL SHALL BE KEYED WITH EQUIPMENT-WIDTH BENCHES PRIOR TO COMPACTION AND FILL PLACEMENT.

LEGEND

- (PROPERTY LINE)
- (EDGE OF PAVEMENT)
- (FENCE)
- (FIRE HYDRANT)
- (WATER VALVE RISER)
- (AC PAVEMENT)
- 7285 (EXISTING GROUND CONTOUR & ELEV.)
- FILTER FENCE PER DETAIL SHT 2.
- 7295 FINISHED GROUND CONTOUR & ELEV.
- (RETAINING WALL)
- (CONCRETE VALLEY GUTTER)
- (CONCRETE CURB WALL)
- HYDROSEED AND INSTALL EROSION CONTROL BLANKET
- LIMITS OF DISTURBANCE-ALL EXISTING ITEMS WITHIN L.O.D. ARE TO BE REMOVED (UNLESS OTHERWISE NOTED)
- HYDROSEED

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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SAN LUIS OBISPO

PREPARED & SUBMITTED BY:

DATE:

REVISIONS:	BY:

PREPARED FOR:

ORMAT

MAMMOTH GEOTHERMAL PLANT M1

RECLAMATION SITE PLAN

MAMMOTH LAKES, CA.

DATE 05/12/11
SCALE AS SHOWN
DRAWN TP / MF
JOB NO. 3030.2
PLATE 3B
SHEET 9 OF 9

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Reclamation Plan
Mammoth Pacific
MP-1, MP-2, M-1 Power Plants

APPENDIX B
Retention Calculations

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Calc'd By:	mf
Job No.:	3030.2
Date:	4/29/2011

Mammoth Geothermal Plant M1 - Reclamation Plan

Storage Volume Calculation

Input:

Rainfall Quantity	1 in	=	0.083 ft
Percolation Rate	0 in/hr	=	0.000 ft/hr

Tributary Area

	SITE (excluding road)		
	Area		Runoff Coefficient
Roof Area	0,000 sf	0%	0.95
AC Pavement	0,000 sf	0%	0.90
Landscape	203,282 sf	100%	0.25
Total Area	203,282 sf	100%	**0.25**

Average Volume = Total Area * Average Runoff Coefficient * Rainfall

Storage Volume Required **4,235 cf**

Storage Sizing Calculations

From AutoCad Volume Claculations

Basin A	5,130 cf
Basin B	6,551 cf

Storage Volume Provided **11,681 cf**
Volume required 4,235 cf

Adequate Storage? **YES**

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Calc'd By:	mf
Job No.:	3030.2
Date:	4/29/2011

Mammoth Geothermal Plant MP2 - Reclamation Plan

Storage Volume Calculation

Input:

Rainfall Quantity	1 in	=	0.083 ft
Percolation Rate	0 in/hr	=	0.000 ft/hr

Tributary Area

	SITE (excluding road)		
	Area		Runoff Coefficient
Roof Area	0,000 sf	0%	0.95
AC Pavement	0,000 sf	0%	0.90
Landscape	201,523 sf	100%	0.25
Total Area	201,523 sf	100%	**0.25**

Average Volume = Total Area * Average Runoff Coefficient * Rainfall

Storage Volume Required **4,198 cf**

Storage Sizing Calculations

From AutoCad Volume Claculations

Basin A	5,012 cf

Storage Volume Provided **5,012 cf**
Volume required 4,198 cf

Adequate Storage? **YES**

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Calc'd By:	mf
Job No.:	3030.2
Date:	4/29/2011

Mammoth Geothermal Plant MP1 - Reclamation Plan

Storage Volume Calculation

Input:

Rainfall Quantity	1 in	=	0.083 ft
Percolation Rate	0 in/hr	=	0.000 ft/hr

Tributary Area	**SITE (excluding road)**		
	Area		**Runoff Coefficient**
Roof Area	0,000 sf	0%	0.95
AC Pavement	0,000 sf	0%	0.90
Landscape	67,723 sf	100%	0.25
Total Area	67,723 sf	100%	**0.25**

Average Volume = Total Area * Average Runoff Coefficient * Rainfall

Storage Volume Required **1,411 cf**

Storage Sizing Calculations

From AutoCad Volume Claculations

Basin A	1,594 cf

Storage Volume Provided **1,594 cf**
Volume required 1,411 cf

Adequate Storage? **YES**

Reclamation Plan
Mammoth Pacific
MP-1, MP-2, M-1 Power Plants

APPENDIX C

Cost Estimate

2/8/2012

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ENGINEER'S PRELIMINARY COST ESTIMATE
MAMMOTH PACIFIC WELL REMOVAL
RECLAMATION PLAN

Item Description	Quantity	Unit	Unit Cost		Total Cost
A. PRODUCTION WELL					
REMOVE PUMP AND WELL PIPING INCL. Well Drill Rig @$6,000/day, 3 laborers @$600/day and trucking@$1,600/day	9	EA	40,000	$	360,000
REMOVE PIPING, CONTROL BUILDING AND RESEED SITE:incl. bulldozer and loader @ $3,600/day, hydroseeder and operator @$1,200/day and seed @$10,000	9	EA	100,000	$	900,000
			SUBTOTAL:	$	1,260,000
B. INJECTION WELL					
RECLAIM PAD (remove piping, pump control bldg., concrete pad, and reseed)incl. bulldozer and loader @ $3,600/day, hydroseeder and operator @$1,200/day and seed @$10,000	5	EA	20,000	$	100,000
			SUBTOTAL:	$	100,000
			SUBTOTAL ITEMS A-B:	$	1,360,000
			20% Contingencies	$	272,000
			TOTAL:	**$**	**1,632,000**

2/8/2012

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ENGINEER'S PRELIMINARY COST ESTIMATE
MAMMOTH PACIFIC M1
RECLAMATION PLAN

Item Description	Quantity	Unit	Unit Cost		Total Cost
A. GENERAL					
MOBILIZATION incl equipment transport, employee per diem	1	LS	44,000	$	44,000
			SUBTOTAL:	$	44,000
B. EROSION CONTROL					
FILTER FENCING / STRAW WATTLE incl wattle at $0.40 per lf and labor @$20/hr	1	LS	1,500	$	1,500
EROSION CONTROL BLANKET incl. blanket @$0.70/sf and laborores @$40/hr for 20 hrs	28,316	SF	1	$	28,316
HYDROSEEDING incl. hydroseed and sprayer @ $0.20 per sf and two operators @15/hr ea totalling $0.19 per sf	203,282	SF	0.30	$	60,985
FINE GRADING (INC. SHAPING OF 2:1 SLOPES) w/ excavator $3,000/day (w/operator) and bulldozer @ $1,500/day for 4.5 days	1	LS	20,000	$	20,000
			SUBTOTAL:	$	110,801
C. REMOVALS:					
EQUIPMENT REMOVAL AND SALVAGE (incl. 150T crane @$3,000/day for 40 days and 50T crane @ $1,800/day for 80 days	1	LS	170,000	$	170,000
CONCRETE DEMOLITION and DISPOSAL incl. excavator and loader @ $43/cy and trucking and disposal @ $20/cy	1,060	CY	65	$	68,900
PAVING AND BASE incl. bulldozer and loader @ $43/cy and trucking and siposal @ $20/cy	430	CY	63	$	27,090
UNDERGROUND RETENTION BASIN incl. excavator and loader @ $4,400/day and trucking and disposal @ $20/cy	1	LS	50,000	$	50,000
			SUBTOTAL:	$	315,990
			SUBTOTAL ITEMS A-C:	$	470,791
			20% Contingencies	$	94,158
			TOTAL:	**$**	**564,949**

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ENGINEER'S PRELIMINARY COST ESTIMATE
MAMMOTH PACIFIC MP1
RECLAMATION PLAN

Item Description	Quantity	Unit	Unit Cost		Total Cost
A. GENERAL					
MOBILIZATION incl equipment transport, employee per diem	1	LS	44,000	$	44,000
			SUBTOTAL:	$	44,000
B. EROSION CONTROL					
FILTER FENCING / STRAW WATTLE incl wattle at $0.40 per lf and labor @$20/hr	1	LS	1,500	$	1,500
EROSION CONTROL BLANKET incl. blanket @$0.70/sf and laborores @$40/hr for 20 hrs	4,553	SF	1	$	4,553
HYDROSEEDING incl. hydroseed and sprayer @ $0.20 per sf and two operators @15/hr ea totalling $0.19 per sf	64,678	SF	0.30	$	19,403
FINE GRADING (INC. SHAPING OF 2:1 SLOPES) w/ excavator $3,000/day (w/operator) and bulldozer @ $1,500/day for 4.5 days	1	LS	20,000	$	20,000
			SUBTOTAL:	$	25,456
C. REMOVALS:					
EQUIPMENT REMOVAL AND SALVAGE (incl. 150T crane @$3,000/day for 20 days and 50T crane @ $1,800/day for 40 days	1	LS	75,000	$	75,000
CONCRETE DEMOLITION and DISPOSAL incl. excavator and loader @ $43/cy and trucking and disposal @ $20/cy	1,797	CY	63	$	113,211
PAVING AND BASE incl. bulldozer and loader @ $43/cy and trucking and siposal @ $20/cy	622	CY	63	$	39,186
			SUBTOTAL:	$	227,397
			SUBTOTAL ITEMS A-C:	$	296,853
			20% Contingencies	$	59,371
			TOTAL:	**$**	**356,224**

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ENGINEER'S PRELIMINARY COST ESTIMATE
MAMMOTH PACIFIC MP2
RECLAMATION PLAN

Item Description	Quantity	Unit	Unit Cost		Total Cost
A. GENERAL					
MOBILIZATION incl equipment transport, employee per diem	1	LS	44,000	$	44,000
			SUBTOTAL:	$	44,000
B. EROSION CONTROL					
FILTER FENCING / STRAW WATTLE incl wattle at $0.40 per lf and labor @$20/hr	1	LS	1,500	$	1,500
EROSION CONTROL BLANKET incl. blanket @$0.70/sf and laborers @$40/hr for 34 hrs	2,653	SF	1	$	2,653
HYDROSEEDING incl. hydroseed and sprayer @ $0.20 per sf and two operators @15/hr ea totalling $0.19 per sf	201,523	SF	0.30	$	60,457
FINE GRADING (INC. SHAPING OF 2:1 SLOPES) w/ excavator $3,000/day (w/operator) and bulldozer @ $1,500/day for 4.5 days	1	LS	20,000	$	20,000
			SUBTOTAL:	$	64,610
C. REMOVALS:					
EQUIPMENT REMOVAL AND SALVAGE (incl. 150T crane @$3,000/day for 40 days and 50T crane @ $1,800/day for 80 days	1	LS	150,000	$	150,000
CONCRETE DEMOLITION and DISPOSAL incl. excavator and loader @ $43/cy and trucking and disposal @ $20/cy	3,377	CY	63	$	212,751
PAVING AND BASE incl. bulldozer and loader @ $43/cy and trucking and siposal @ $20/cy	2,300	CY	63	$	144,900
			SUBTOTAL:	$	507,651
			SUBTOTAL ITEMS A-C:	$	616,261
			20% Contingencies	$	123,252
			TOTAL:	**$**	**739,513**