

**DRAFT PROJECT DESCRIPTION  
FOR THE  
COTTONWOOD SAND MINING PROJECT  
JAMACHA, CA**

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## Table of Contents

1.0 PROJECT INTRODUCTION .....	1
1.1 Project Goals .....	5
2.0 Existing Conditions .....	5
2.1 Project Location .....	5
2.2 Site History .....	5
2.3 Surrounding Land Uses .....	6
2.4 Existing Land Entitlements .....	6
2.5 Mineral Classification .....	6
3.0 COTTONWOOD SAND MINE .....	7
3.1 Project Scope .....	7
3.2 Project Reserves .....	7
3.3 Project Property .....	7
3.4 Project Operations and Facilities .....	10
3.5 Utilities .....	20
3.6 Site Access .....	20
3.7 Traffic .....	21
4.0 COTTONWOOD SAND MINE RECLAMATION PLAN .....	21
4.1 Reclamation Phasing .....	22
4.2 Revegetation .....	22
4.3 Monitoring .....	24
4.5 Weed Control and Maintenance .....	25
5.0 FINANCIAL ASSURANCE .....	26
6.0 REQUIRED APPROVALS, PERMITS, AND REVIEW .....	26
7.0 PROJECT SUMMARY .....	27

### List of Figures

Figure	Title	Page
1.1-1	Site Location	2
1.1-2	Site Vicinity	3
3.3-1	Assessor's Parcel Map and Ownership	8
3.4-1	Site Plan and Mine Phasing	10
3.4-2	Typical Slope Grading Detail	15

### List of Tables

Table	Title	Page
1	Assessor's Parcels	7
2	Mine Phase Acreages	14
3	Project Mobile Equipment	14
4	Daily Truck Trips	19
5	Other Traffic Trips	19
6A	Southern Willow Scrub Seed Mix	21
6B	Mule Fat Scrub Seed Mix	21
6C	Coastal Sage Scrub Seed Mix	21
7	Weed Species of Concern	23
8	Project Summary	28

### Attachments

Attachment A: Conceptual Mine Plan

Attachment B: Due Diligence Traffic Study

## 1.0 PROJECT INTRODUCTION

The Cottonwood Sand Mining Project (project) is proposed in the Sweetwater River Valley. The proposed project would produce 4.8-million cubic yards (5.8-million tons) of mineral resource over a 10-year period in the Jamacha Valley on land that is currently utilized as two 18-hole golf courses and is zoned for extractive use.

Areas disturbed by resource extraction will be progressively reclaimed. Reclaimed areas will be restored to an end use of open space and, in limited areas, pads suitable for future development along Willow Glen Drive. The combined mineral extraction and reclamation project will affect, approximately, 250 acres of land located in Jamacha Valley on approximately 279.8 acres. A vicinity map of the Jamacha Valley and the overall project area is attached as Figure 1.1-1 and Figure 1.1-2.

The Ivanhoe golf course operations will continue as mining is completed in phases. At the beginning of Phase 2, the front nine holes of Ivanhoe will be closed as mining begins in this area. During Phase 2, the golf course will continue play as a 9-hole golf course on the back nine holes until the final phase of mining begins.

The project will require approval of a Major Use Permit that extend to the property boundaries in an area totaling 279.8 acres. which includes the disturbed areas, the golf course ponds, the 50-foot setback from Willow Glen Drive and setbacks from sensitive areas.

The mineral extraction project will require approval of a Major Use Permit by the County of San Diego. Attendant to this action, a Reclamation Plan for the mining operations will need to be approved in compliance with County ordinance and the California Surface Mining and Reclamation Act of 1975 (SMARA).


Approximately 250 acres will be affected by resource extraction and reclamation activities, including backfilling and revegetation. Areas disturbed by the operation will be progressively reclaimed starting in year 2 as mining proceeds to the east. Reclamation is an ongoing process that commences when mining operations have ceased within a given area and continues until all mining related disturbance is reclaimed and all equipment involved in these operations have been removed.

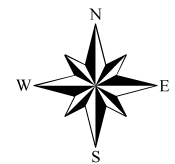
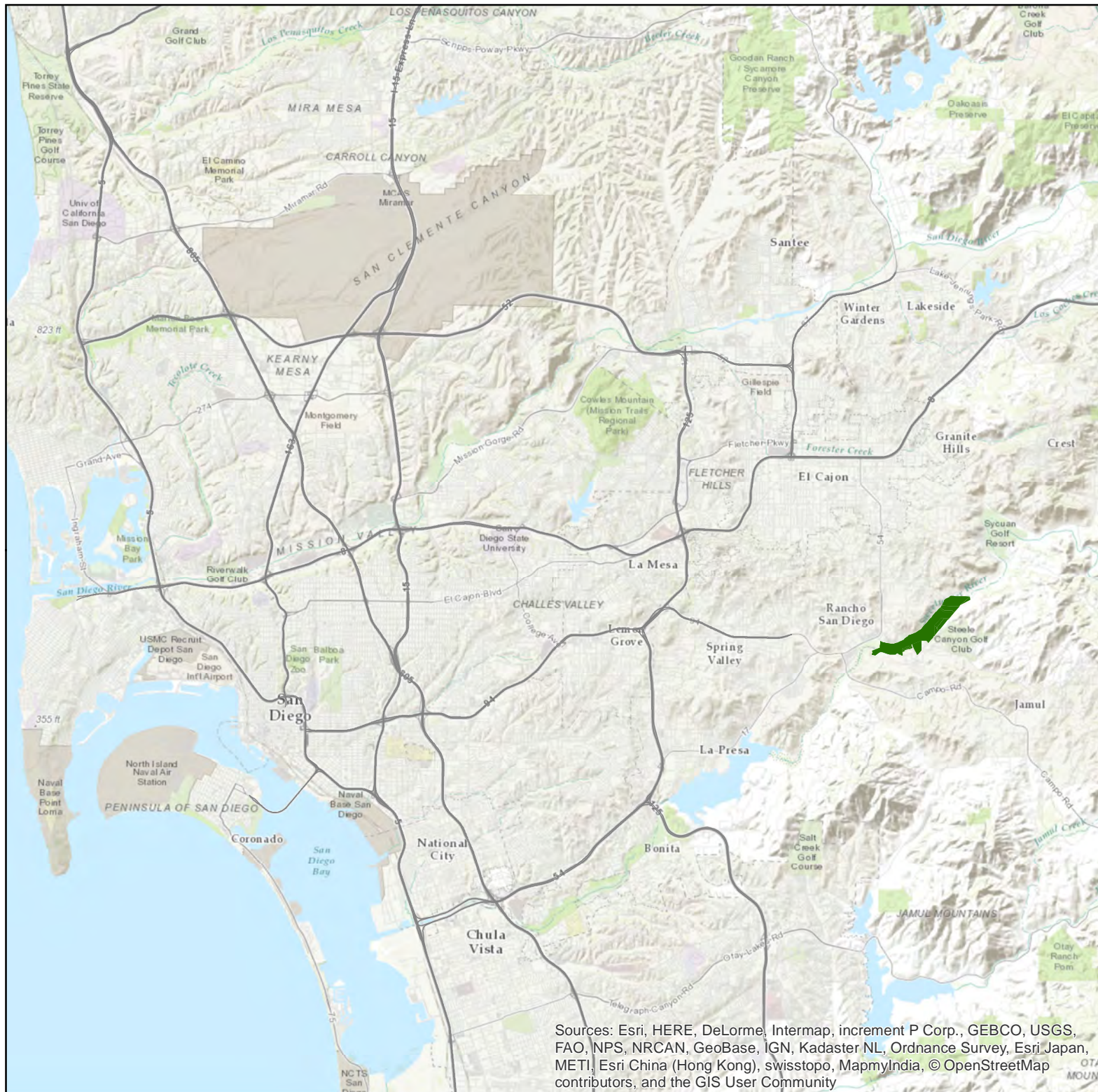
The project is expected to be fully completed in 12 years, i.e., mining will be ongoing for 10 years. Reclamation will commence 2 years after the start of mining and will continue over a 10-year period. As such, reclamation is expected to be concluded 2 years after the completion of mining. Post mining land use will be riparian habitat within the channel and pads suitable for future development within specified areas.

Associated activities include an aggregate processing facility, all support structures and buildings in the form of scales, scale house module and storage containers. Setbacks of 50 feet in width will be established along Willow Glen Drive prior to commencing operations.

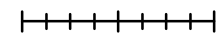
The MUP would authorize a maximum production limit of 785,000-tons (523,000 cubic yards) of construction grade aggregate in any calendar year. Production from

Figure 1.1-1:  
Cottonwood Sand Mine  
Regional Location

 Cottonwood Sand Mine Site



0 1.5 3 Miles




1 in=3 miles

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community


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September 26, 2017

Figure 1-1.2:  
Cottonwood  
Sand Mine  
Site Vicinity

 Cottonwood Project Boundary



0 1000 2000 Feet  


1 in=2,000 feet

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September 26th, 2017



the site will average of 523,000-cubic yards on an annual basis. Excavated material will total 6.5-million cubic yards with approximately 4.8-million cubic yards (7.85-million tons) of construction aggregate produced. Material produced will be primarily washed concrete sand.

The project will be developed in three mining phases and will generally proceed in a west to east direction. The first phase will involve installation of access roads, creation of a pad for a processing plant east of Steele Canyon Road, placement of a conveyor/slurry line running west to east and development of the initial extraction area. As phases proceed the conveyor/slurry line will be moved to serve the areas mined in later phases. A final phase, Phase 4, will be a final reclamation, cleanup and equipment removal phase. Revegetation monitoring will continue after this final phase.

Two other options for processing and shipping materials are being considered. The first option is to place the processing pad in the far southwestern corner of the property. The adjacent property, which would provide access to this area, is owned by the U.S. Fish and Wildlife Service and is currently within a National Refuge. If a short term access right of way for a maintenance road and conveyor line can be negotiated with the agency, this will be where the processing facility would be located. This option would include a loadout facility located along Highway 94 on County owned property which would allow materials to be shipped out via State Route 94. Using this highway for shipping, rather than Willow Glen Drive, would avoid two major road intersections that would be impacted (cumulative impacts) by the project.

The second option is to slurry raw materials along the Willow Glen Drive right of way to the Hester's Quarry for processing and shipping. Numerous benefits would occur under this option including utilizing existing facilities and trucking to process and ship materials thus avoiding duplication of equipment. Under both options, reclamation of these areas would serve to expand and connect the County trail system in the area.

Wheeled, front-end-loaders will mine the materials to approximately one foot above the existing water table and load directly into a conveyor/slurry hopper. In areas where excavation extends below the water table, long reach excavators would be utilized for pit excavation. The conveyor/slurry line will deliver the material directly to the processing plant, near the north-central portion of the project, where the material will be washed.

Final grading will begin after mining and backfilling is complete within a given area; and as extractive operations proceed to the east. Planting of graded areas will be conducted as final landforms are established and become available for revegetation. This process will continue throughout the duration of the project.

Reclamation will consist of widening the channel of the Sweetwater River and backfilling areas along Willow Glen Drive. Riparian habitat will be established within the channel. Within specified areas along Willow Glen Drive, pads suitable for future development will be established. Land suitable for future development near the public roadways will be planted with an erosion control seed mix; if development is not pending.

## **1.1 Project Goals**

The goals of this Project are to:

1. Recovery of construction aggregates in a safe and efficient manner.
2. Address the need for construction-grade aggregate resources, specifically sand products, in San Diego County, and help meet the current and projected demand for construction aggregates within this market area over a 10-year period. Provide reliable, high-quality, aggregate product at a maximum permitted production level of 360-thousand cubic yards per year and a minimum of 4.8-million cubic yards of total shipped product.
3. Widen the existing channel while maintaining the existing channel elevations and slope.
4. Backfill select extraction areas to the approximate elevation of adjacent roadways and reduce the width of the existing, mapped floodplain.
5. Return extracted areas along the river's channel to open space and revegetate with native species suitable for wildlife habitat.
6. Reduce the County's dependence on imported aggregates, thereby reducing product cost, vehicle miles traveled, highway maintenance requirements, and vehicle emissions.
7. Minimize and mitigate potential environmental impacts that might otherwise be created by the Project, to the extent feasible, by design and methods of operation.

## **2.0 Existing Conditions**

### **2.1 Project Location**

The site is situated within the Sweetwater River watershed and in the floodplain of the Sweetwater River which flows through the central part of the properties. It is located parallel to Willow Glen Drive in Jamacha, CA; an unincorporated area of San Diego County (Figure 1.1-2). The western edge of the project areas is approximately 600 feet east of the intersection of Willow Glen Drive and Jamacha Road extending approximately 1.7 miles to the east of that intersection. Steele Canyon Road connects to Willow Glen Drive approximately .75 miles east of Jamacha Road.

The entrance to the project site is 0.4 miles northeast of the intersection of Willow Glen Drive and Steele Canyon Road with an address of 3121 Willow Glen Drive, El Cajon, CA 92019. Willow Glen Drive will serve as the primary route used by the project.

### **2.2 Site History**

Prior to the 1940s, the project site and surrounding lands of the Jamacha Valley were predominately used for commercial ranching and agriculture, most of which had

ended by the 1950s. A 1953 aerial photograph of the project site indicates that the flood plain of the Sweetwater River was primarily open space and was also being mined for construction aggregates on the south side of the river and west of Steele Canyon Road. Mineral extraction uses in this area had expanded to the east side of Steele Canyon Road by the early 1960s. Other disturbed areas observe on the 1953 aerial photograph suggest surface mining may have been occurring adjacent to Willow Glen Drive on the western end of the property and it appears that a dirt aviation landing strip may have also been present.

Mining activities along Steele Canyon Road continued into the 1970s as both golf courses were developed. Construction of the golf courses began in approximately 1962 with the Lakes Course (formerly the Monte Vista Course) on the western end of the property.

Since 1964, the property has been used as a public golf course. Facilities at the golf club consist of a large parking lot, a clubhouse, practice facilities and two, 18-hole championship length golf courses. Sand extraction continued at the site through the years, which allowed the golf course to be modified with water hazards and expanded fairways.

Presently, operations at the site utilize approximately 700-acre feet of water annually from a series of onsite water wells and storage reservoirs.

### **2.3 Surrounding Land Uses**

The proposed project is set within the Jamacha Valley adjacent to the village of Jamacha and approximately 0.5 miles east of Rancho San Diego community. Existing conditions find a variety of land uses in the project vicinity. Land uses include residential, rural residential, extractive operations to the east and an adjacent golf course. Open space is present in the hills south, east and west of the site. A National Wildlife Refuge abuts the western end of the property along the river. Land use near the project site is limited by physical constraints with the presence of the Sweetwater River channel, which passes through the site in an east to west direction, and by steep terrain on the north and south.

### **2.4 Existing Land Entitlements**

The golf course site is generally aligned along both sides of the Sweetwater River and extends for approximately two miles along Willow Glen Drive. The golf course is approved (Special Permit No. 61-090 W2M1) to occupy low lands within the Sweetwater River floodplain.

### **2.5 Mineral Classification**

The property was previously classified by the California Geological Survey (CGS) as a combination of MRZ-3 and MRZ-4 with a small section of MRZ-2 land located on the northwest end of the property. In 2017, CGS released Special Report 240 *Update of Mineral Land Classification: Portland Cement Concrete-Grade Aggregate In The Western San Diego County Production-Consumption Region, California* which reclassified the property from MRZ-3 and MRZ-4 to MRZ-2. This reclassification action was based on an aggregate resource evaluation report (TerraMins, 2006) provided to CGS in 2016 by

the property owner. A classification of MRZ-2 indicates that the area is underlain by mineral deposits where geologic data show that significant measured or indicated resources are present.

### **3.0 COTTONWOOD SAND MINE**

#### **3.1 Project Scope**

The Project proposes to mine sand suitable for Portland Cement Concrete (PCC) use over an extended period within designated phases. Reclamation of the mined lands will follow as soon as mining operations are completed in a specific area. Reclamation procedures will be phased with mining operations and will be initiated immediately after the conclusion of resource extraction and backfilling to design elevations.

The maximum level of aggregate production is anticipated to be 785-thousand tons per year (MTPY). This level of production will be realized after 1 year of site development. Actual production levels and project life will depend on market demand but will not exceed the maximum permitted production level.

The project is expected to continue for 12 years. This will include 10 years of extraction and reclamation of previous phases. Reclamation of previously disturbed areas is anticipated to begin in year 2. Vegetation monitoring will continue for 3 years after reclamation.

#### **3.2 Project Reserves**

The site is designed to yield approximately 7.85-million tons, or 5.2-million cubic yards, of construction aggregate product. The volume of material to be excavated will be approximately 4.0-million cubic yards.

Following extraction in some areas, a portion of the site will be backfilled to establish pads suitable for future development. Backfill is expected to be a combination of overburden, imported inert fill and wash fines produced at the wash plant.

Backfill would be imported as mine phases develop and space becomes available to accept the material. Wash fines would be returned to the backfill areas via a slurry pipeline. Imported backfill during Phase 1 would be brought onto the site using an access point south of the existing intersection of Muirfield Drive and Willow Glen Drive. Upon completion of the backfilling effort, this new access point would be left in place for potential future use.

#### **3.3 Project Property**

##### **Legal Description**

The project is located within portions of Sections 9, 10, and 16, Township 15 South, Range 1 East of the El Cajon Mountain, California, U.S. Geological Survey (USGS) 7.5-minute quadrangle, San Bernardino Base and Meridian, County of San Diego, California at approximately 32°52' 38.53" N latitude -116° 52' 50.00 W longitude.

### Assessor Parcel Numbers, Ownership and Zoning

The Project is located on twenty-two separate Assessors Parcels (APNs) as presented in following table and on Figure 3.3-1. Portions of the property will not be mined although those areas may be disturbed as part of the reclamation effort for the property. Table 1 also presents the total acreage and zoning for each parcel.

**Table 1. Assessor's Parcels**

APN	TOTAL ACRES (approx.)	OWNER	ZONING <sup>1</sup>
506-021-1900	8.20	Cottonwood Cajon ES, LLC	S88
506-020-5200	4.01	Cottonwood Cajon ES, LLC	S80
518-012-1300	2.97	Cottonwood Cajon ES, LLC	S90
518-012-1400	46.61	Cottonwood Cajon ES, LLC	S90
518-030-0500	2.30	Cottonwood Cajon ES, LLC	S90
518-030-0600	5.58	Cottonwood Cajon ES, LLC	S90
518-030-0700	2.59	Cottonwood Cajon ES, LLC	S90
518-030-0800	0.69	Cottonwood Cajon ES, LLC	S90
518-030-1000	7.16	Cottonwood Cajon ES, LLC	S90
518-030-1200	6.88	Cottonwood Cajon ES, LLC	S90
518-030-1300	10.20	Cottonwood Cajon ES, LLC	S90
518-030-1500	4.04	Cottonwood Cajon ES, LLC	S90
518-030-2100	56.71	Cottonwood Cajon ES, LLC	S90
518-030-2200	19.43	Cottonwood Cajon ES, LLC	S90
519-010-1500	33.72	Cottonwood Cajon ES, LLC	S90
519-010-1700	14.59	Cottonwood Cajon ES, LLC	S90
519-010-2000	19.22	Cottonwood Cajon ES, LLC	S90
519-010-2100	1.10	Cottonwood Cajon ES, LLC	S90
519-010-3300	1.76	Cottonwood Cajon ES, LLC	S90
519-010-3400	7.17	Cottonwood Cajon ES, LLC	S90
519-010-3700	1.06	Cottonwood Cajon ES, LLC	S90
519-011-0300	23.80	Cottonwood Cajon ES, LLC	S88
<b>Totals:</b>	<b>279.79</b>		

<sup>1</sup>S90, Holding Area; S88, Specific Planning Area; S80, Open Space  
General Plan Land Use Designation is OS-R, Open Space – Recreation

Parcels 506-021-1900 and 519-011-0300 are both zoned S88 – Specific Plan which restricts an Extractive Use type to “Site Preparation”. Uses planned for these two parcels include some excavation and processing. A change to the zoning or the granting of an exemption, in accordance with the zoning use regulation 2888 a., would be required for these two parcels.

APN #: XXX-XXX-XX



November, 2017

### **3.4 Project Operations and Facilities**

The project will extract, process, and market aggregate using conventional earth moving and processing equipment. Resources extracted and processed at the site are suitable for construction uses and will be transported to customers in San Diego County. Batch plants and/or rock crushing are not proposed for the project.

Facilities anticipated for use at the site will include a processing plant to wash and stockpile finished products, a storage container, weigh scales and modular scale house. Initially, this equipment will be located near the center of the project area, adjacent to Willow Glen Drive west of the existing parking lot. Initial site development activity will involve the establishment of the processing plant. As discussed in Section 1.0, page 4 of this document, the preferred location for the plant is in the far southwestern corner of the property.

The project will also import inert fill to be used as backfill in areas parallel to area. Landscaped earthen berms will be placed on the southern and northern edges of the process area to screen the equipment and loading area from public view. A belt conveyor/slurry line will also be installed on the site to move mined material from the excavation areas to the processing area.

Over-the-road trucks will access the plant area via the western entrance to the existing golf course parking lot. Site preparation activities will include the excavation of a ramp from the west end of the parking lot to the processing pad.

The Site Plan and Mine Phasing are presented as Figure 3.4-1.

#### **Access**

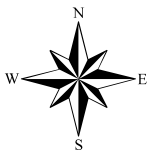
If a right of way agreement cannot be negotiated with the U.S. Fish and Wildlife Service for a maintenance road and conveyor access to the preferred plant location (Figure 3.4-2) from SR 94, primary site access for the project will require modification of the existing driveways and parking lot located on Willow Glen Drive next to the clubhouse. Since golf activities will continue during the first two phases of the mineral extraction project, the parking lots and driveways at the clubhouse will be divided. The western entrance and parking area will be limited to use by the mining and processing operations, while the eastern driveway and parking areas will be limited to golf activity.

A new access point to the property west of the Steele Canyon Road (Phase 1 area), from Willow Glen Drive, will be necessary as the clearance height of the bridge that crosses the Sweetwater River on Steele Canyon Road will not allow large trucks or heavy equipment to pass beneath the bridge. The clearance height beneath the bridge is approximately 11 feet.

Figure 3.4-1:  
Cottonwood  
Site Plan  
and  
Mine Phasing

- Cottonwood Project Boundary
- Mined Prior to 1966
- No Mining Areas
- Cottonwood Phasing Lines
- Proposed Plant Location

Previously Mined Lands  
creates a Natural Set Back



0 350 700 Feet  
|-----|-----|

1 in=700 feet

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October 25, 2017

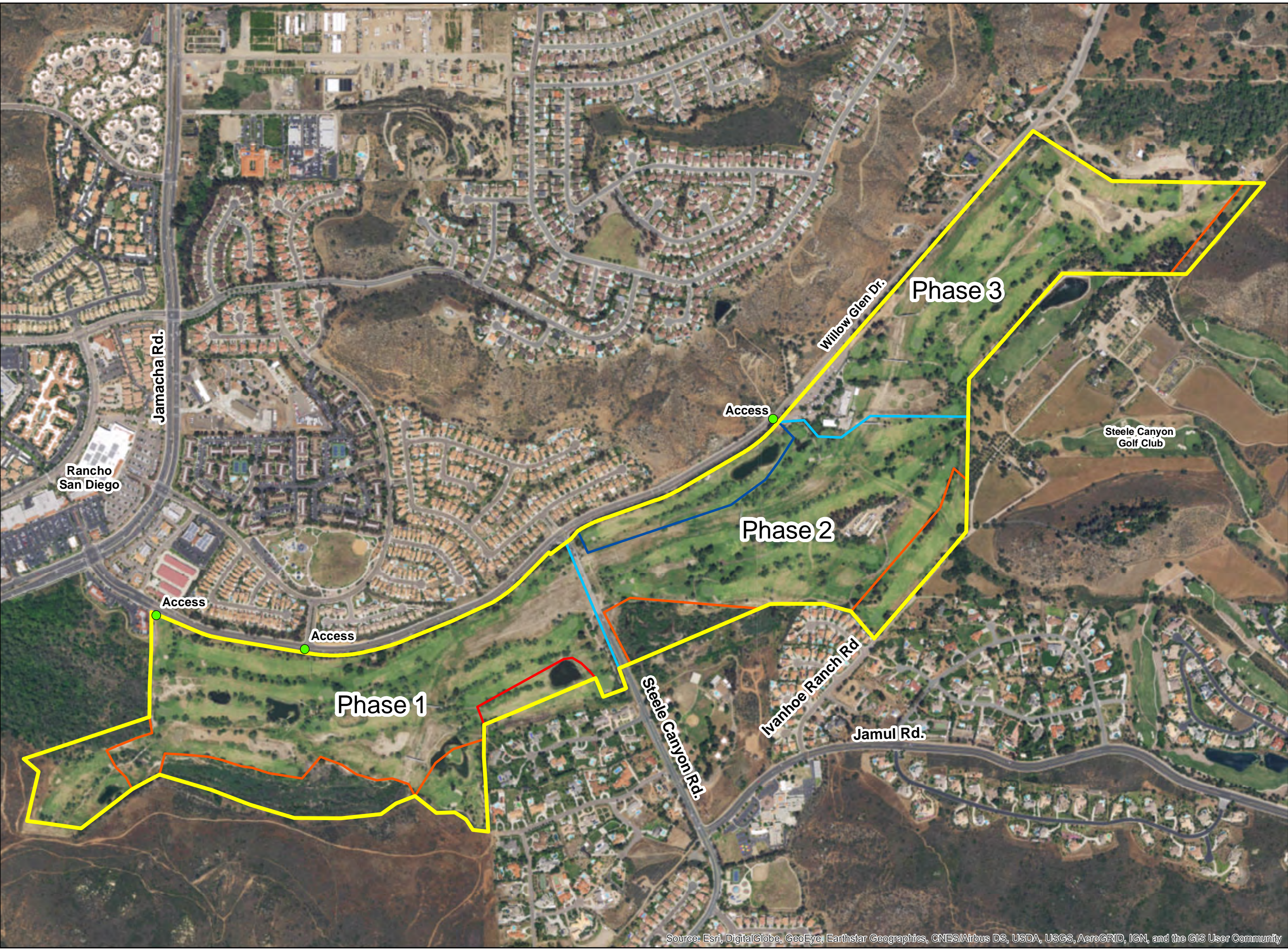





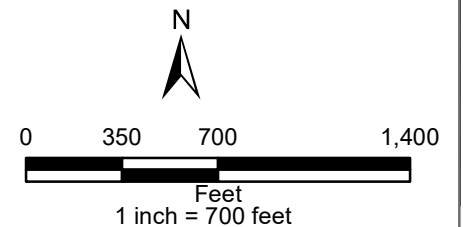
Figure 3.4-2

## Potential Conveyor Access and Loadout

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Source: Aerial - ESRI  
Date: 3/19/2018

— Potential Conveyor Access  
 Cottonwood Project Boundary



Current access from Willow Glen Drive to the western portion of the property is provided by a small driveway at the northwestern corner of the property. During the initial stages of the project, this access point may be used briefly for equipment delivery. However, a more substantial access point for this area of the project will be constructed at the intersection of Willow Glen Drive and Muirfield Drive. The new access point will be used to allow over-the-road haul trucks to deliver backfill and for service vehicles during Phase 1 operations.

Other access points on the property exist south of the river, however, these points will only be used by the project for light vehicle activity when needed. These points will continue to be used for golf course maintenance staff while the golf course is operating.

### **Operational Setbacks**

All extractive operations will be setback from the property boundaries by a minimum of 50 feet. Minimum setbacks from areas identified as Mature Riparian Woodland on the southern side of the golf course will be 50 feet from the outer foliage of the trees. Setbacks for sensitive areas, such as residential properties and riparian habitat may be increased as the operation develops.

### **Vegetation**

Existing vegetation on the golf course was developed as landscaping and for fairway definition. This vegetation will be removed as excavation proceeds. Areas on the southern edges of the project that appear to be mature riparian woodland will not be disturbed.

Landscape vegetation along Willow Glen Drive will be maintained during the project to provide a visual barrier to shield the operation from the public.

### **Topsoil and Overburden Removal**

The end use for the property is proposed to be open space within the revised channel and pads suitable for future development within limited areas of the site. Topsoil on the site is very sandy and is similar to the subsurface material. It will not be needed to revegetate most of the disturbed area. Any topsoil salvaged will be placed in berms around the plant, the roads and the top of extraction areas until these areas are available for top cover. Wash fines developed from the process will be used as backfill or mixed with any salvaged topsoil as final cover and incorporated in the surface prior to planting.

### **Blasting**

There will be no blasting associated with the project.

### **Mining Operations**

Phased mineral extraction will occur over an approximate 250-acre area within the 279.8-acre property. The maximum excavation depth is proposed to be 40 feet below the existing land surface outside the channel. The average depth of excavation is expected to be approximately 15-feet.

At maximum production, approximately 112 truck-loads per day would exit the site with a similar number entering the site each day. Sand excavation and processing will

occur on weekdays between the hours of 7:00 a.m. and 5:00 p.m. Trucking operations during the week will operate from 4:00 am to 6:30 am and from 9:30 am to 3:00 pm to avoid peak traffic periods in the area. Material sales and transportation will also occur on Saturdays, from 5:00 a.m. to 1:00 p.m. No operations will occur on Sundays.

Mining operations consist of excavating materials with wheeled front-end-loaders; moving the material by haul truck directly to a conveyor belt which will then transport material to the processing plant or stockpiles at the plant. Options to these methods of excavating, hauling and transportation to the plant are being considered and include the use of self-loading scrapers to excavate and move material and replacing the belt conveyor system with a slurry pipeline to transport material to the processing plant.

Operations will commence at the western limit of the excavation area and proceed in an easterly fashion in future phases.

Extractive operations are anticipated to continue for 10 years with reclamation of previously disturbed areas starting in year 2 and progressing to the east as mining advances. Following the completion of mining in Phase 3, reclamation will commence in this area and continue for another 2 years. As a result, mining and reclamation are expected to continue for 12 years.

### **Mine Phases**

The Project will be developed in three, continuous phases and begin with the placement of the processing plant and development of the conveyor/slurry line from the plant to the western portion of the property. Temporary power lines and the processing plant equipment will also be installed.

The processing pad will be located north of the river channel and west of the existing parking lot. Existing landscape vegetation will remain in place along Willow Glen Drive. Landscaped earthen berms will also be placed on the north and south sides of the plant to screen the facility from public view.

A conveyor or slurry line will also be installed to transport materials to the plant from the excavation areas. In Phase 1, this conveyor/slurry line will initially run parallel with Willow Glen drive and cross beneath Steele Canyon Road near the northern edge of the bridge that crosses the Sweetwater River. The loading bin can be moved in near proximity to the extraction areas as mining continues. The ability to move the loading bin reduces heavy equipment requirements.

The conveyor/slurry line will be re-located into Phase 2 and, subsequently, Phase 3 operations as mining activity is concluded in preceding phases. In Phase 2 and Phase 3, the conveyor/slurry line will utilize existing golf cart river crossings to transport materials across the river channel.

As resource extraction is completed, backfilling of specific areas with imported materials and wash fines will begin. It is anticipated that trucks returning to the site will deliver backfill material and then be loaded with product on the outbound trip. Areas selected will be backfilled to an elevation that is above the floodplain of the Sweetwater River. Backfill materials will be compacted as it is spread. Final backfill

elevations shall be comparable to adjacent, public roadways and the areas graded to a gently sloped plain that drains to the Sweetwater river.

#### Phase 1

The first phase (Phase 1) will include site development for the construction of the access road, processing area pad, screening berms and conveyor line. Following the initial site development activities, extractive operations will commence in the area west of Steele Canyon Road.

Initial extractive operations will involve removal of all materials from the surface to approximately 1 foot above the water table (approximately 25 to 35 feet below ground surface) with wheeled front-end-loaders or scraper. Approximately, 68 acres will be included in Phase 1.

Wash fines produced from the processing plant will be transported to areas where excavation has been completed and used as backfill along with imported fill. Wash fines may also be pumped through a slurry pipeline back to the mining area. This pipeline would be routed along the same path as a conveyor or slurry line.

At the plant, waste water and wash fines will be directed through a series of settling basins constructed adjacent to the plant. The settling basins will be used to collect wash fines, which will be sold as a soil amendment, incorporated into the surface of areas to be reclaimed or returned to mined areas as backfill.

Reclamation of the Phase 1 area will begin as the final land forms are established. Reclamation will include establishment of all final slopes, incorporation of any accumulated wash fines and topsoil, revegetation of the channel using native species common to riparian habitat, and establishment of pads suitable for future development, weed control, and monitoring.

#### Phase 2

Phase 2 will continue the identical extraction process in a west to east direction on an area of approximately 49 acres east of the Steele Canyon Road bridge. This phase is anticipated to last approximately 3 years. Excavation of the materials will continue in the west and proceed eastward in the same fashion as utilized in Phase 1. The maximum depth of the excavation is expected to be approximately 30 to 40 feet below ground surface outside the channel.

Reclamation of the Phase 2 area will begin as the final land forms are established. Reclamation will include establishment of all final slopes, incorporation of any accumulated wash fines and topsoil, revegetation of the channel using native species common to riparian habitat, and establishment of pads suitable for future development,

#### Phase 3

The excavation process in Phase 3 is a repeat of Phase 2 on approximately 50 acres of the valley, east of the Phase 2 area. Phase 3 is anticipated to last about 4 years and will employ the same procedure as the two previous phases. Upon conclusion of Phase 2, the conveyor/slurry line will be relocated to run from the plant eastward.

Reclamation of the Phase 3 area will begin as the final land forms are established. Reclamation will include establishment of all final slopes, incorporation of any accumulated wash fines and topsoil, revegetation of the channel using native species common to riparian habitat, and establishment of pads suitable for future development.

#### Phase 4

Phase 4 will consist of final reclamation efforts, cleanup and equipment removal. Revegetation monitoring will continue after this final phase. Mine Phase acreages and the estimated duration of each phase are summarized in Table 2.0.

**Table 2. Mine Phase Acreages**

Mining Phase	Area Affected by Mining Operations (acres)*	Mining Duration (years)	Mining Initiation Date (est.)	Mining Completion Date (est.)	Reclamation Completion Date (est.)
1	68	3	2020	2023	2025
2	49	3	2023	2026	2028
3	50	4	2026	2030	2032
Total	230	10**	-	-	-

\*rounded to nearest acre

\*\*Phases would have concurrent mining operations

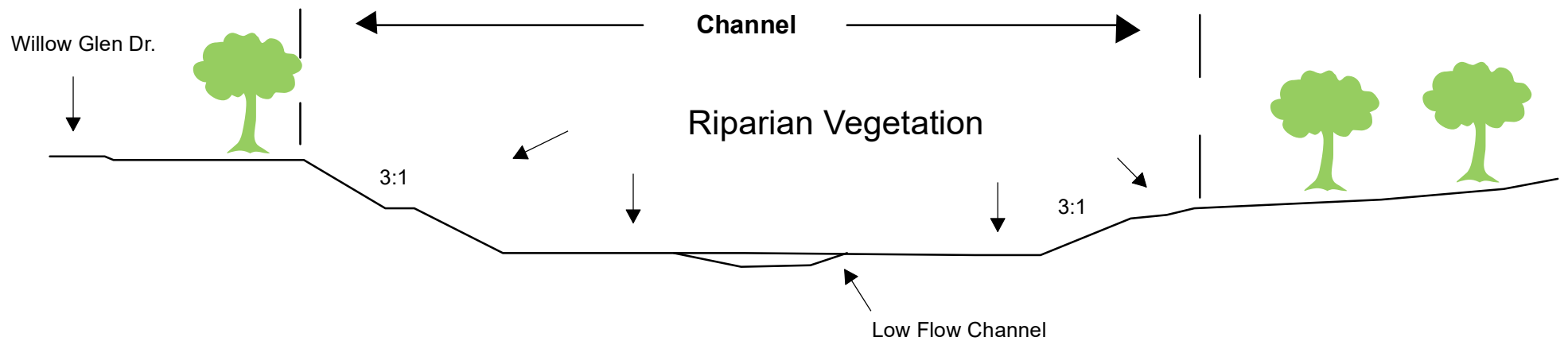
The final landform will be a relatively flat plain that gently slopes downward from east to west. Reclaimed upland areas will be similar in elevation to Willow Glen Drive or other public roads adjacent to the property on the south. A widened river channel will bisect the length of the site. Banks of the river channel will slope up to the plain surface at a 3H:1V ratio or shallower. The elevation difference between the bottom of the river channel and the top of the slope may be up to 25 feet. The reclaimed river channel is expected to average approximately 250 to 300 feet in width. In some areas, benches may be constructed on the face of the river banks to accommodate habitat variation. (Figure 3.4-3)

#### Mobile Equipment

The following table presents the mobile equipment to be employed for Project:

**Table 3. Project Mobile Equipment**

Onsite Mobile Equipment - Project				
No.	Make	Type/Model	Purpose	Usage
1	CAT	Loader - 988	Mineral Excavation above water table.	100%
2	CAT	Loader - 980	Mineral excavation above water table; plant and truck loading	100%
1	Peterbilt	Water Truck	General dust suppression	100%
1	CAT	Grader - 12	On-site road maintenance, finish grading	50%
1	CAT	Dozer – D9	Reclamation – rough grading	50%
3	CAT	Haul Truck 769	Onsite transportation of fill	75%
1	Doosan	420 Excavator	Mineral extraction	50%
1	Trailer	Fuel tank	3500 gallon mobile fuel trailer	30%
1	Ford	Pick Up	Transportation for site supervisors, QC	20 miles/day



**Figure 3.4-3: Typical Slope Grading Detail**

### **Plant Operations**

The Cottonwood Mine plant site will consist of aggregate processing and washing facilities, a portable water tank, and all support structures and buildings (e.g., scale, office kiosk and office trailer). No blasting or rock crushing will occur on site. A small portable processing plant will be utilized during the initial development stage of the project and will be replaced by a larger plant in a fixed location once the pad area, access road, conveyor/slurry line and the main pit are developed.

Shielded night lighting may be installed around the processing plant for security purposes. Lighting will be designed to minimize glare and reflection onto neighboring areas. Generally, pole-mounted sodium, metal halide, fluorescent or LED lighting will be employed. Such lighting minimizes energy use, and in combination with cut-offs, reduces light pollution.

Operations shall comply with the San Diego County Noise Ordinance 9962.

### **Aggregate Processing Plant**

The plant will screen and wash raw material into marketable PCC grade construction aggregate material; washed concrete sand, asphalt sand, pipe bedding and some gravel. No crushing is required to process the materials extracted from the site. Water would be provided by existing groundwater wells on the property. Processed aggregates would be separated into different sizes and stored in large stockpiles (up to 25 feet in height) near the plant. Customer trucks would be loaded with finished products from stockpiles by front-end-loaders and transported off-site.

Pole line-power to the plant will be installed in one of the first steps of the project startup and connected to existing power lines on, or adjacent to, the project site. After the processing pad, conveyor and the access road are in place and the main pit started, a larger screen deck plant will be installed. All equipment will be properly permitted in accordance with San Diego County APCD requirements.

### **Office and Equipment Maintenance**

The mobile modular unit used for the scale booth will be combined to serve the site's administrative needs. Required on-site documents will be housed in this unit.

Equipment maintenance will be conducted in the plant area and will follow all environmental regulations. Storage of tools or small equipment will be in metal cargo containers also located at the plant site.

### **Extraction Waste**

All material extracted from the site, not designated as saleable product, will be utilized as backfill to construct the final land form. No tailings or waste piles will remain following conclusion of extractive operations. Domestic refuse shall be collected in trash bins and removed by a licensed, refuse disposal company. Equipment will be maintained on-site and all used oils, fuels and solvents collected in accordance with the Department of Toxic Substances Control regulations and picked up by an approved hauler for materials recycling.

### **Operational Water**

A water truck will be used for dust suppression on all operating areas. This includes material stockpiles and unpaved areas within the mining area, the processing plant, and access road. Other water requirements include surface watering of outgoing loads and water for the processing equipment.

Water usage depends on production volume. Production volume will vary year-to-year with market demand; however, the project's estimated water usage assumes the maximum annual production of 785,000 tons. Water usage is estimated at 100 acre-feet annually for this production rate. A single water truck will be required to control dust. Water required to suppress dust from the mining operations is estimated to require 35 acre-feet of water per year. Irrigation of the landscaped earthen berm near the entrance and as supplemental water on revegetated areas is also estimated to utilize approximately 45 acre-feet per year. Total water consumption for the project is estimated at 180 acre-feet per year. Water for processing, dust control and irrigation will be supplied by groundwater from wells on site.

Eight groundwater wells on the property currently provide irrigation water for the golf courses on the property. These wells will be used to provide water for the operation. Existing use of groundwater by the golf courses has been estimated to be in approximately 702 acre-feet per year based on pump ratings and irrigation schedules. Mine operations will significantly reduce this groundwater use. Wells not to be used by the property owner after mining and reclamation are complete will be properly abandoned in accordance with County requirements and standards.

### **Storm Water and Erosion Control**

The site will contain de-siltation basins that prevent sediment from leaving the site while allowing water to pass through to pre-existing drainage features. Mining and reclamation grading will direct the runoff from the disturbed area towards these basins.

Erosion control measures will be implemented in accordance with the following criteria:

Class 1: No soil loss or erosion; topsoil layer intact; well-dispersed accumulation of litter from past year's growth plus smaller amounts of older litter.

NO ACTION NECESSARY

Class 2: Soil movement slight and difficult to recognize; small deposits of soil in form of fans or cones at end of small gullies or fills, or as accumulations back of plant crowns or behind litter; litter not well dispersed or no accumulation from past year's growth.

ACTION: Monitor to see if any further deterioration and action is required.

Class 3: Soil movement or loss more noticeable; topsoil loss evident, with some plants on pedestals or in hummocks; rill marks evident, poorly dispersed litter and bare spots not protected by litter.

**ACTION:** Any rills or gullies exceeding 8 square inches in cross sectional area and more than 10 linear feet located on finished slopes shall be arrested using straw mulch and hay bales

Class 4: Soil movement and loss readily recognizable; topsoil remnants with vertical sides and exposed plant roots; roots frequently exposed; litter in relatively small amounts and washed into erosion protected patches.

**ACTION:** Replant via hydroseeding or spread seed and cover with straw mulch. Re-grade, compact with equipment and install silt fences if necessary

### **Additional Facilities**

The project will include the following facilities in addition to the plant:

1. Portable restrooms
2. Two metal cargo containers for storage.
3. One 70-foot truck scale and modular mobile for scale booth and administrative functions

### **Site Security and Safety**

Public health and safety will be protected in accordance with local, state and federal standards. During the project lifetime, public access will be controlled by fencing on the perimeter of the property and gates on the access roads within the Project boundaries. These gates will be locked during non-operating hours. In addition, appropriate signage will be posted around the perimeter of the pit and project boundary adjacent to undeveloped lands. MHSA and Cal-OSHA rules, regulations, and standards will be employed to protect both the public and on-site employees.

## **3.5 Utilities**

### **Sewage Disposal**

The Project will utilize a portable restroom(s). The portable restroom(s) will be serviced at appropriate intervals by contract vendors.

### **Drinking Water**

Drinking water will be provided by a private vendor.

### **Power**

The Project requires electrical power, which will be provided by San Diego Gas & Electric through an overhead transmission line that enter the site from the north. The project will utilize temporary power poles for the plant location and conveyor/slurry system.

## **3.6 Site Access**

### **Public Roads**

Public roads to be utilized for the site include Willow Glen Drive, Steele Canyon Road, Jamacha Road, State Route 54 and State Route 94.

### 3.7 Traffic

Project traffic is separated into two categories: heavy vehicle traffic and light vehicle traffic. Onsite heavy vehicle traffic would include an off-road haul truck, front-end-loaders, dozers and other earth-moving equipment; and supply trucks, service trucks and on-highway trucks carrying loads of construction aggregate, fuel, parts, etc. on public roads. Heavy vehicle traffic also refers to over-the-road vehicles as listed below:

- Incoming trucks and outgoing loads of finished product.
- Supply and service trucks (fuel, parts, etc.)

Light vehicle traffic includes light vehicles used by employees and visitors such as cars, pick-up trucks and small service vehicles. Access to the site mining area will be restricted 24 hours per day through a controlled entrance. Gates will be installed and will be closed and locked during non-operational hours.

The project will gradually increase production from approximately 350,000 tons in the first year to 785,000 tons in the second year. At maximum production levels, the project will not exceed 785,000 tons per year.

Access will be provided for all vehicle traffic through the on-site access roads connecting with Willow Glen Drive. The two-lane, access road will be a minimum 28 feet in width.

Estimated traffic counts for the project are based on production of 785,000 tons per year as it is divided into various trip generation classes:

#### Truck Trips

**Table 4. Daily Truck Trips**

End Product	% of Total	Quantity	t/load	Loads/day	Round Trips
Aggregate	100	785,000 tons	27	112	224
Total		785,000 tons		112	224

**Table 5. Other Traffic Trips**

Trip Type	One way trips/day	Round Trips/day
Light Vehicle Trips	15	30
Vendor Trips <sup>1</sup>	4	8

<sup>1</sup>Vendor trips include fuel, supplies, service companies, etc.

### 4.0 COTTONWOOD SAND MINE RECLAMATION PLAN

The Surface Mining and Reclamation Act of 1975 (SMARA) and San Diego County Code require approval of reclamation plan for all surface mining operations. Reclamation plans are developed to identify reclamation measures and establish performance standards for reclamation adequacy of mined lands. These measures include protection of wildlife habitat, revegetation, re-contouring and erosion control, elimination or reduction of residual public health and safety hazards and minimization

of environmental impacts. A reclamation plan also addresses subsequent uses of the property and identifies schedules for reclamation activities.

The reclamation plan for this project features conditions which will make portions of the land suitable for one of two post mining uses: riparian habitat/open space and land suitable for future development under separate entitlement.

#### **4.1 Reclamation Phasing**

Although the project is short term, reclamation will occur concurrently with the extraction activities. As the project progresses, cut slopes will be brought to final grade and revegetated beginning at the western boundary and moving eastward throughout the site. Following completion of mining activity in any given area, reclamation will commence.

Backfilling and rough grading will be continuous as mining progresses. The river channel will be continuously developed as resource extraction progresses to the west. Final grading will occur as areas become available for this activity. Wash fines will be blended with topsoil and utilized as a top dressing. As final land form areas are prepared for seeding, irrigation will be installed. Seeding and planting will occur between November and February time to take advantage of the natural precipitation season for Southern California. This planting period may be extended due to the use of irrigation. It is expected that seed and vegetative cuttings will be planted on the river banks and channel each year.

At the end of the extraction operations in Phase 3, about 25 acres of disturbed land will need to be backfilled, graded and revegetated as most of the land disturbed by the operation will have already been reclaimed.

#### **4.2 Revegetation**

Revegetation of disturbed areas of the site will be completed as final graded surfaces are achieved. The reclamation plan for the riparian corridor is intended to stabilize the post-extraction landform and establish a productive native vegetative cover. For areas suitable for post-mining development, the reclamation plan is intended to stabilize the surface and control erosion until future development occurs.

Reclamation of the site will include: (1) removal of all manmade structures; (2) grading to achieve final landforms; and (3) revegetation and monitoring. Taken together, these activities will achieve the goals of the reclamation plan and leave the site suitable for subsequent land uses. Plant species used will be capable of self-regeneration without continued dependence on irrigation, soil amendments or fertilizer, and will include species representative of natural habitat. Example seed mixes are presented in Tables 7A through 7C.

## Example Revegetation Seed Mixes & Container Plants

**Table 6A. Southern Willow Scrub Seed Mix**

Species	Common Name	% Cover	Quantity	Container Size	Plant Density (ft. on center)
<i>Anemopsis californica</i>	yerba mansa	5	810	1 gallon	5
<i>Baccharis salicifolia</i>	mule fat	10	827	1 gallon	7
<i>Leymus condensatus</i>	giant wild rye	5	413	1 gallon	7
<i>Platanus racemosa</i>	Western sycamore	5	13	1 gallon	40
<i>Populus fremonti</i> ssp.	Western cottonwood	10	101	1 gallon	20
<i>Rosa californica</i>	California rose	2.5	405	1 gallon	5
<i>Salix gooddingii</i>	black willow	10	405	1 gallon	10
<i>Salix lasiolepis</i>	arroyo willow	60	3,798	1 gallon	8
<b>Total:</b>		<b>122.5</b>	<b>7,907</b>		

Reference: S&S Seeds, Carpinteria, CA  
Jepson Manual: Higher Plants of California. 1993

**Table 6B. Mule Fat Scrub Seed Mix**

Species	Common Name	% Cover	Quantity	Container Size	Plant Density (ft. on center)
<i>Anemopsis californica</i>	yerba mansa	5	122	1 gallon	5
<i>Baccharis salicifolia</i>	mule fat	90	2,197	1 gallon	5
<i>Leymus condensatus</i>	giant wild rye	5	62	1 gallon	7
<i>Vitis girdiana</i>	wild grape	5	122	1 gallon	5
<b>Total:</b>		<b>105</b>	<b>2,504</b>		

**Table 6C. Coastal Sage Scrub Seed Mix**

Species	Common Name	Density (lbs./acre)	Purity/Germination %	Lbs.
<i>Baccharis pilularis</i>	coyote brush	2.0	90/80	5.4
<i>Bromus carinatus</i>	California brome	20.0	95/80	54.0
<i>Encelia californica</i>	California encelia	1.0	40/60	2.7
<i>aphalium californicum</i>	California pearly everlasting	2.0	90/80	5.4
<i>Lotus scoparius</i> var. <i>scoparius</i>	deerweed	3.0	90/60	8.1
<i>Rhus integrifolia</i>	lemonade berry	8.0	90/80	21.6
<i>Salvia apiana</i>	white sage	2.0	70/50	5.4
<i>Trifolium tridentatum</i>	tomcat clover	8.0	90/80	21.6
<i>Vulpia microstachys</i>	pacific fescue	8.0	90/80	21.6
<b>Total:</b>				<b>145.8</b>

All reclaimed areas will be reseeded by means of hydroseeding, planting of potted seedlings and hand sowing. Application rates shown in Tables 7A through 7C reflect a minimum amount of each plant species that will be used in the mix.

Each seed mix will be utilized in a specific area of the reclaimed topography. The upper bench will be planted to native trees and shrubs and the Coastal Sage Scrub seed mix will be planted on 3h:1v slope areas. Riparian type trees will be planted on the pit floor along the channel and will transition to Southern Willow Scrub and Mule Fat Scrub between the channel and side slopes. It is expected that some intermixing of these species will occur along the edges of each area.

Hydroseeding is the hydraulic application of a homogeneous slurry mixture consisting of water, seed mix, cellulose fiber and a binding agent such as “M” Binder. Fertilizer can be added if the soil analysis shows the need for addition of amendments; however, native plant communities do not tend to benefit from the use of fertilizer and can result in excessive weed infestations. As such, the use of fertilizer is not anticipated.

The hydroseed mixture shall consist of the following materials:

- 2,000 lbs/acre cellulose fiber
- 140 lbs/acre “M” Binder (gluing agent)
- 200 lbs/acre Milogranite (fertilizer if required)
- Seed mix as listed

Hydroseeding application shall be performed only at times when winds are relatively calm between November and February. These months are selected to take advantage of the natural wet season of Southern California.

### **Irrigation**

Supplemental irrigation of reclaimed lands may be used during the first two years after planting to augment natural precipitation. Watering will only occur to assist in initial establishment and/or in long periods of extended dryness. Irrigation will not be used continuously after seeding. Irrigation will be completed using sprinklers and will adhere to San Diego County Ordinances.

### **4.3 Monitoring**

After seeding and before release of the financial assurance, all revegetated areas must meet performance criteria. The most meaningful performance criteria for erosion control and visual mitigation are based on vegetative cover and species-richness. At two years from completion of revegetation for a specific area, the effort will be evaluated to determine if performance standards have been met.

The following minimum standards must be achieved:

#### Performance Standards\*

Vegetative Cover (m: meters)	Species Composition / Species Richness	Percent Cover	Density
Seed Mix	Target Goal: 100% of the most prevalent species shall be native species 12 randomly placed 50-meter by 1-meter transects.	Target Goal: 50% cover (all native species combined) 12 randomly placed 50-meter by 1-meter transects.	N/A
Container Stock	Target Goal: 5 tree species 12 randomly placed 50-meter by 1-meter transects.	N/A	Target Goal: 30 total trees per acre (80% survival) 12 randomly placed 50-meter by 1-meter transects.

\*Performance Standards may be modified based on mitigation requirements.

Monitoring will be continued annually until performance standards have been achieved. The performance standards listed above may be re-evaluated in the future. Therefore, it is possible that minor adjustments will be made to the proposed performance standards.

#### 4.4 Test Plots

A minimum of two revegetation test plots will be established on the site as reclamation commences. These test plots will be placed in areas based on the project biologist's recommendations. The project biologist will also develop an evaluation plan that will be implemented after the test plots are planted.

#### 4.5 Weed Control and Maintenance

Weed eradication will be used to limit and control invasive noxious weeds such as those species listed in Table 8.

**Table 7. Weed Species of Concern**

Common Name	Scientific Name
Giant Reed, Arundo	<i>Arundo donax</i>
Mustard	<i>Brassica sp.</i>
Ripgut Brome	<i>Bromus diandrus</i>
Cheat Grass, Downy Brome	<i>Bromus tectorum</i>
Pampas Grass	<i>Cortaderia spp.</i>
Eucalyptus	<i>Eucalyptus spp.</i>
Pepperweed	<i>Lepidium latifolium</i>
Tree Tobacco	<i>Nicotiana glauca</i>
Castor Bean	<i>Ricinus communis</i>
Russian Thistle, Tumbleweed	<i>Salsola tragus</i>
Tamarisk, Salt Cedar	<i>Tamarix spp.</i>

Weed control and maintenance on the site will continue during the operation and the reclamation process. Maintenance of the revegetation areas shall consist of reseeding unsuccessful revegetation efforts. If revegetation efforts are not successful within four years following the initial seeding, seeded areas will be reevaluated to determine the measures necessary to improve revegetation success. If necessary, these areas will be reseeded with methods modified, as needed. Prior to reseeding, the revegetation specialist shall evaluate previous revegetation practices and test plot results to identify cultural methods to benefit the overall revegetation effort.

Weed control is necessary to reduce or eliminate the occurrence of undesirable non-native species of plants that may invade the site where mining activities have removed the native plant cover and where active and natural revegetation is taking place. Non-native invasive species (weeds) can compete with native plant species for available moisture and nutrients and consequently interfere with revegetation of the site after the completion of mining.

The occurrence of weeds on the site shall be monitored by quarterly visual inspection. The goal is to prevent weeds from becoming established and depositing seeds in areas to be revegetated in the future. If inspections reveal that weeds have become, or are becoming, established on the site then removal will be initiated.

Weed removal will be accomplished through manual, mechanical or chemical methods depending on the specific circumstances. Smaller plants (brome grasses, pepper weed) that cover more area may be sprayed, scraped with a tractor, or chopped by hand, depending up on the size of the area of infestation and the number of desired native plants in proximity or mixed with the weeds.

## **5.0 FINANCIAL ASSURANCE**

The operator will, pursuant to SMARA and County Code, post a financial assurance payable to the County and the State Department of Conservation in an amount sufficient to cover the cost of reclaiming disturbed portions of the site. The financial assurances will be reviewed and updated annually.

## **6.0 REQUIRED APPROVALS, PERMITS, AND REVIEW**

The discretionary agency actions for the Project are as follows:

1. San Diego County: Major Use Permit
2. San Diego County: Reclamation Plan
3. U.S. Army Corps of Engineers: Section 404 Clean Water Act Permit
4. California Department of Fish and Wildlife: 1602/1603 Stream or Lake Alteration Agreement
5. San Diego Regional Water Resources Board: Waste Discharge Order and 401 Water Quality Certificate
6. San Diego County Air Pollution Control District: Emissions Discharge Permit

## 7.0 PROJECT SUMMARY

A summary of pertinent details for the Project is presented in Table 9 as follows:

**Table 8. Project Summary**

General Site Information	
Applicant	Cottonwood Mine
Project Proponent	To Be Determined
Property Owner (s)	Cottonwood Cajon ES, LLC
Project APN's	506-021-1900, 506-020-5200, 518-012-1300, 518-012-1400, 518-030-0500, 518-030-0600, 518-030-0700, 518-030-0800, 518-030-1000, 518-030-1200, 518-030-1300, 518-030-1500, 518-030-2100, 518-030-2200, 519-010-1500, 519-010-1700, 519-010-2000, 519-010-2100, 519-010-3300, 519-010-3400, 519-011-3700, 519-011-0300
Surface Elevation	325' to 380' AMSL
General Plan Designation	Open Space (Recreational)
Zoning	S80 - Open Space; S88 - Specific Planning Area; S90 - Holding Area
Williamson Act Contract	No
MRZ Designation	MRZ- 2 (CGS Special Report 240, 2017)
Current Land Use	Golf Courses - Recreational
Major Use Permit Boundary	279.8 acres
Reclamation Plan Boundary	279.8 acres
Mining	
Mining Area	Estimated 250 acres within the existing golf course footprint
Setback Limit	50 feet, 100 feet from residential
Maximum Mining Depth	302 feet AMSL (approximately 40' below existing ground surface)
Approx. Groundwater Elevation (range)	Approximately, 316 (west end) to 341 feet (east end) AMSL.
Mining Slopes	3H:1V (horizontal:vertical) maximum
Type of Minerals	Alluvium
Maximum Total Production	6.5-million cu.yds. (7.85-million tons)
Maximum Annual Production	785-thousand tons
Commencement of Mining	Within 1 Year After Permit Approval
Duration of Project	12 years (10 years of extraction and reclamation with 2 years for final reclamation after cessation of extraction)
Mining Permit Expiration	February 31, 2033
Reclamation	
Revegetated Area	Approximately 230 acres
Duration of Reclamation	Continuous starting in year 2 and extending 2 Years after cessation of mining.
Completion of Reclamation	2033 estimated
Post Mining Land-Uses	Open space/riparian habitat, land suitable for development under separate entitlement and recreational trails.