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Use Your Illusion

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by

Scott Lyne

Committee in charge:

Professor Jennifer Pastor, Chair
Professor Amy Adler
Professor Alain Cohen
Professor Anya Gallaccio

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ABSTRACT OF THE THESIS

Use Your Illusion

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Scott Lyne

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Professor Jennifer Pastor, Chair

Use Your Illusion is a sculpture that emerged from an exploration of Bristol Dry Lake, a desert alkali flat, where a coveted salt used in a multitude of industries, liquid calcium chloride, is leeched through solar evaporating pools.

Use Your Illusion

A shaved head, which is synonymous with the discipline of active duty, needn't be mandated for a layman's sojourn; but driving through Twentynine Palms the impression is given that once properly buzzed, one is well-equipped enough to soldier out into the Mojave.

The city's principal north-south strip, Adobe Road, is bespeckled with barbershops that service personnel stationed at the Marine Corps Air Ground Combat Center (MCAGCC), the entrance of which lies just up the road.

After haunting the thoroughfare for two years, I've come to realize that conceding to the clipper at Combat Barber II needn't be a formality or rite of passage associated only with military training; but perhaps also an obeisant salutation made by a rookie about to encounter an expanse far greater than that of any sequestered Marine base.

MCAGCC is the world's largest Marine Corps training ground; 932 square-miles of restricted *terra firma* subjected to live-fire, artillery, tank, and immersive tactical and close air support training on an unprecedented level; a counterfeit stage that has been blasted with a cavalcade of modern weaponry for nearly 60 years.

The sector of operations is home to atmospherics such as Combat Town, a facsimile 2-acre Iraqi village complete with dummy mosque and an IED Alley; the colossal CAMOUT, a newly completed 280-acre simulated urban environment split into seven "districts" set-dressed with 1,250 buildings and a 1,600-seat Olympic-size soccer stadium modeled after an arena in Mogadishu; as well as many decidedly "un-Hollywood" archaeological sites of interest (currently numbered at 1,701) containing prehistoric quarries and ancient Native American petroglyphs, pictographs and lithic scatter.

Stud Cuts, aside from having the best name on the block, outranks its competition not because the staff at 4890 Adobe Road sculpts the “best flat tops in town,” or gives a free shampoo with every cut, but by virtue of its index at a crucial juncture. The modest one-story stone structure is deposited at the foot of Amboy Road.

It is from this intersection I begin my desert campaigns with a right turn off Twentynine Palms’ main drag and out into a space congruent with the speculative jurisdiction Rod Serling aptly designated “the dimension of imagination.”

For roughly 40 miles up Amboy Road lies a true battlefield; one that has endured razor-burn more intense than any presaged back on the strip—a setting whose torn exterior may be besieged by the same harsh spotlight, but an altogether different theater of operations with no trace of “Tinseltown” from across the street; only a saturated echo of its woebegone Technicolor, Bristol Dry Lake.

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Bristol Dry Lake is the largest in a trinity of salt flats that occupy the Bristol-Cadiz-Danby trough, cutting an oblique path through the desert in a northwest-southeasterly direction. The gorge is thought to be a major structural feature of the central Mojave and is one of the most arid regions in North America.

Upon descent into its interior, a wanderer would sorely note its status, too, as one of the hottest. More crematorium than valley floor, on numerous occasions I've confronted, in horror, a calidity that radiates from the depression's parterre. Each time I arrive I imagine that it couldn't get any more uncomfortable, but I'm repeatedly astounded—it does. You obey or perish and in effect you become tethered to the road.

Hence, one is a prisoner within one's vehicle; and if one chooses to get out, they are then an inmate of the sweeping vastidity. Unless stringent punishment is to be meted out, frankly nobody, criminal or otherwise, really belongs here. Even a hardened character of questionable repute seeking asylum within its sovereignty must take heed of the swelter.

When I visit I bring little; therefore I will have little to lose. To challenge the Mojave with needless luggage is a foolish liability; forasmuch as one will burn, one need not also drown in a place famously devoid of water. My favorite sweatshirt is an omen that's deep purple in color, but bleached by a peroxide more ferocious than that of any purchased in a drugstore. I found it on the side of Amboy Road. It most likely had been jettisoned from a moving car.

While the trine of salt lakes collectively sear in the 110-mile-long basin, what sets Bristol Dry Lake apart from its two alkalescent comrades is its affinity for an unusual ingredient found in saline lakes; one that seldom makes an appearance near the earth's surface, calcium chloride: a white, crystalline and water-soluble salt exuded at the site.

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For decades, the near-surface lenticular beds of stratiform sodium chloride, or halite, the mono-mineral "rock salt," were dismantled from their remote underground asylum at Bristol Dry Lake. It is estimated that the topmost bed still contains 2 to 4 million tons of rock salt. The entire site is thought to have a reserve of more than 60 million tons and is so rich in halite that the salt constitutes more than half of its total content.

Aside from its copious wealth, the lakebed has provided crucial paleogeographic, paleohydrologic, and paleoclimatic information about the evolution of the Mojave Desert—for more than several million years, an exquisite balance between dissolution reaction; biotic activity; and the mechanical, subsidence and chemical deposition of evaporative minerals has occurred, resulting in a sinkhole stacked with ephemeral yet stabilized tiering

Strip-mining procedures would traditionally begin when a 3-to-7 foot layer of sediment was forcibly scraped from the lake's surface with a Grader machine. In construction parlance, the device is still referred to as "the blade."

The extraneous "overburden" would be hauled away with a dragline excavator bucket and dumped in piles lining trenches often 1,000 feet in length. This activity exposed the uppermost halitic lens prior to it being penetrated by augers, which would gouge out holes so the crystalline veneer could be inserted with explosives and detonated. Masses of halite could then be collected and transported several miles north to Saltus, where they would be washed, bagged and shipped via the intermodal and mixed-freight network of BNSF.

Saltus is station number 19290 on the Needles subdivision of the rail corridor; and at present, a functioning ghost town that still serves as a transport pivot for goods from the dry lake due to its adjacency to the railroad.

Heavy quarrying was abandoned in the early 1970s; but as the location bathes in brine, solutions of calcium chloride are still acquired as current industry continues to tap hidden resources. Today's seemingly less intrusive exertions aren't as bombast as the drilling and blasting of yesteryear; but the behind-the-scenes maneuverings are redolent with the same energy of hard-mining, and the probe of the lake's warehouse continues to provide tens of millions of dollars in annual revenue.

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Solar evaporating ponds are seeded excavations used to separate calcium chloride from brine by concentration of solar energy. In chemical equilibrium with sub-surface solids, calcium-rich mother liquid is leeched from the lake's basement into drainage canals when filled with brackish water that is procured from aquifers. These channels are used to divert brine, sometimes over a span of several miles, toward pools. Portable transfer pumps are also used to ferry liquid from smaller pits to larger collective recesses for purification. This diversion is largely executed underfoot and obfuscated by mounds of "overburden," which act as levees.

The ponds evaporate over several months at a time, allowing undesirable alkali chlorides to crystallize out as albescent layers on a cavity's floor. Once fully opaque, the underside of a pool will mirror the sky. As salinity levels increase, halophilic micro-biota also help tint the elixer. Crude dig-outs inevitably become bewitching aquamarine bodies; gleams of which remind the occasional passerby who is intrigued enough to pull over and marvel at the curious spectacle that lucrative resources are being accrued.

The waters look religious and with their vitreous appearance, my instinct is to taste. I have, repeatedly, duping myself into committing an act I know will cause sorrow, for every time I do I instantly spit out some of the most astringent liquid I have ever put to my lips. With a saline composition nearing 40 percent, submergence produces a dessicating residue on skin. And according to one hard-as-nails foreman I spoke with roadside—a burly guy with a sandblasted face punctuated by an effeminate earring dangling from his left lobe—a dip in a pool would be tantamount "to putting a blowtorch to your asshole."

Due to excessive heat, summer months bring harvest as brine is concentrated into a highly dense solution of calcium chloride. Approaching 140 degrees Fahrenheit and around 14 times saltier than that of average seawater, would I regret lustrating myself in such ulcerous liquid?

Precipitating out of this is the disunion between a solar evaporating pool's ability to suggest an exquisite and seductive swimming hole and its erosive contents, which painfully betray the illusory proposition.

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The products that result from this enterprise are used in a multitude of applications. Among them: gas drying in refineries and petrochemical plants; fluoride removal in wastewater management; as a fugitive dust-control operative and road-base stabilizer; as energy storage and phase change media; in the manufacture of agricultural nutrients; in food, beverage and pharmaceutical processing; as fluid for work-over operations in the oilfield industry; as tire ballast for tractors and farm implements; as anti-freeze for coal transport and storage; and as accelerators for ready-mix concrete curing in cold weather.

During winter months, rock salt is commonly utilized as a melting agent to manage ice on both state and municipal roadways. In fact, its No. 1 ranked end-use is within the de-icing industry based on its availability and abundance.

Though around a bitterly cold 15 degrees Fahrenheit where rock salt falls short with regards to its liquefying efficiency, calcium chloride picks up the reigns for it has the lowest practical freezing point among de-icers at -25 degrees Fahrenheit. The temperature where a hyper-saturated solution of calcium salt would finally solidify, its cryohydric point, is an unfathomable -67 degrees Fahrenheit. Sodium chloride's is only -6.016 degrees. The ultra-lucent waters of Bristol Dry Lake would never freeze.

By virtue of this outstanding conduct more than half of the calcium salts that are produced go into the anti-icing and dust-control markets where they are championed as low-application superior-grade alternatives to conventional rock salt. Though as it is more costly, as a result, calcium chloride is often employed synergistically in proprietary blends as an additive, or a booster to "spike" a product, thus making it "enhanced," "extreme" or "industrial strength." And goods such as Pellets of Fire, Hot Stuff, Driveway Heat and Inferno shamelessly bespeak of the salt's hardcore exothermic disposition.

Calcium chloride is saliferous testosterone and the advertising propaganda only aggrandizes the idea that Bristol Dry Lake is inseminated with a vigorous and potent elixir.

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As products containing calcium salts boast of the compound's voracity, if one were to disavow, even momentarily, the concision between that of reality and the chimerical antics of the desert—enveloped by the blinding white of the salt flat—could one conceivably anticipate a violent show of self-immolation? And what if the dry lake were to transform the surrounding basin into a raging burn pit? By perpetually raising its own temperature, the sinkhole would overheat in an uncontrolled positive feedback loop and exhibit its thermal runaway through unmitigated fire.

Would this invoked spectacle cause the space to eventually burst? Or would the valley slowly incinerate, for eternity? And what would this fictional occurrence feel like?

In spite of my projected fantasy, the sinister fact remains that material captured at Bristol Dry Lake resembles material it is used to destroy. Calcium and sodium chloride are the bane of winter weather, both resistant to its hardened temperatures and mercenary in consuming its diverse forms. Befitting that, *en masse*, the space masquerades as a snowscape, one blanketed by desiccants and de-humidifiers; materials unmatched as both frost and freeze point depressants: crystals that annihilate crystals.

I'm unable to divorce its niveous appearance from that of snow and I find it unbalancing to think of the site as a place that could erase itself. What would that look like, and how could I physicalize this question? How could I translate an unfeasible phenomenon, mineralogical suicide, into a sculpture?

While this happening is the stuff of make-belief, the site's façade is not a mirage. Dazed, I'm inclined to imagine these sorts of dilemmas as I sit in a car and cool off, roadside. It's not hard to pretend I'm alone in the empty parking lot of a perverse theme park; a desert landscape cross-dressed and accessorized with an ice-skating rink fit for a giant and moguls fashioned from overload of which a titan can perform freestyle maneuvers over. It's incongruous that visions both playful and inviting come to mind as I'm ensconced in a setting that's totally callous.

Fictive auto-cannibalism aside, the alkali flat usurps its own contents. Halite is a mutinous resident and disrupts the configuration of neighboring sediments: various sand, silt and clay. Plainly visible on the lake's exterior are broken domes of salted cortex that push up from the surface. These tent formations are evidence of the mineral's frenzied sub-surface proliferation, which ousts other native deposits, replacing them with nodular bundles of ill-formed halite.

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Despite being battered by commercial enterprise, and disfigured as a result of its own undoing, the cocktail of minerals that precipitates out from the mix looks ambitiously willed. Their forms resemble contraband, and the lake looks no more like it has seen a miraculous snowfall than it has become a freakish and hallucinatory outcrop of crystal meth.

Halite's resemblance to meth hasn't gone unnoticed, and not unheard of is the dubious transfer of rock salt as bogus meth during an underhanded drug deal. Dispensing an "imitation controlled substance" is not legally parallel to trafficking an actual illegal product, but is still punishable by law.

Rock salt is also employed in the end stage of the drug's preparation, as it is a major component of homemade hydrogen chloride gas. Operators of underground labs utilize hydrogen chloride gas in the "salting out" procedure of the drug's synthesis because its presence produces the hydrochloride salt of methamphetamine. A salt of the drug is both acid-and water-soluble making it fit for human consumption; therefore it can be smoked, injected or insufflated.

A solution of the gas in water is hydrochloric acid, traditionally known as "spirits of salt," and much like its vaporous form, the infusion is also used to obtain soluble salts from a meth base layer. Consequently, the mineral acid has been listed as a Table II precursor by the DEA since 1988 because of its value in the clandestine manufacture of methamphetamine, heroin and cocaine. Because of this designation, the government monitors its distribution and large quantities must be registered with the authorities.

Nonetheless, the chemical in a standardized concentration of 31.45 percent can still be purchased in any hardware store under its antiquated name, "muriatic acid," whose common use as a pH regulator for swimming pools and use as a calcium descaler for swimming pool plaster has been well established for decades.

Methamphetamine is an inherent "muriate," the result of an exchange between "spirits of salt," and an organic base. Curiously, the Latin word *muria* means, "brine." Hence, to be "muriatic" is to be salty, only enhancing the illicit solicitation made by Bristol Dry Lake's *aqua pura*.

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Aside from halite, the geologic strip-search has unveiled a mineralogical inventory including: gypsum, selenite, celestite, anhydrite, calcite, chlorocalcite and antarcticite; the latter being the most fugitive of the *olla podrida* as its ethereal structure rapidly dissolves due to severe hygroscopy.

A rare substance, antarcticite's colorless and prismatic crystals have been witnessed growing as much as 6 inches in length. First observed during the winter of 1961 at Bristol Dry Lake as acicular clusters affixed to the sides of an open brine pit, the oddity remained nameless for three-and-a-half years, but finally received its public introduction by two Japanese geologists in 1965. The duo discovered the mineral thriving on the bottom of the most hypersaline pool of liquid on earth, Don Juan Pond, on the balmy 43 degree Fahrenheit Antarctic summer afternoon of December 30, 1963.

Lamentably, I haven't witnessed antarcticite flourishing in the Mojave; but taking into account the lakebed's nuanced features, I can't assume that I haven't stared right at it. The site promotes material bewilderment and I see no reason to ponder its depth.

Its surface is beguiling whether unrolled as a carpet of layered chevron crystals, or dispatched as disordered fields of bulbous solar salt. The special-effects under my feet, not below ground—nature's "Hollywood," the one I can see and if I want, regrettably taste—the geologic stagecraft more skillfully deployed than the artillery next-door, provokes wonder.

Do these ingredients elusive and interchangeable structures place further emphasis on their ostensible artificiality? And what can be said of their confederacy with environments themselves schismatic and puzzling in nature? I find bemusement in the idea that these tough yet delicate materials revel in extremes on both this world, and perhaps others.

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A material whose displacive behavior isn't limited to that of its bedfellows, salt's prying and impertinent tactics also extend to that of its unsolicited guests—whether it be a 17-ton 613C Caterpillar Scraper, or the spectral scraps of a Dr. Pepper can. Due to its skill in promoting corrosion through absorption of moisture and its dismantling of structure—as it famously does with ice—salts, hijacked at the scene, are themselves innate hijackers; terrorists who threaten all varieties of engineered material.

Halite is relentless. I've witnessed it clutched to everything from wood and rubber to Styrofoam and most dramatically, metal. Calcium chloride loves to eat aluminum and if contact is maintained, concentrated brine will eventually reduce a can into a pile of sludge.

Salts maliciously exhaust aluminum's ductility by causing fissures and flaking through exfoliation, and beverage cans ultimately become bleached from the combined effects of salt and sun. By losing their imprinted voice they are reduced to muted atrophy that tears like aluminum foil.

I've found many that have managed to maintain their original shape; but their forms have been impoverished to a degree that the cans appear to have been crafted from a peculiar membrane, one exhaling the slightest breath of a Coors logo.

Unfortunately a great deal of the lakebed's "human geology" is irretrievable. Over repeated visitations I've watched a discarded tire become mineralogical confectionary, transformed into an oversize doughnut glazed a thousand times over with candied layers of caustic frosting. More prop from a sci-fi film set on a distant icy satellite than actual tire; its confiscation by halite, while spellbinding, is an uncanny example of the mineral's tenacity.

The bulk of peripheral and often salted waste, can be attributed to motorists who toss the detritus from cars. But the most obtrusive presence throughout is that of heavy-duty equipment used by industries in their offensive. Even an uninformed traveler passing through at high speeds in a heat-induced fugue can catch a glimpse of studly paraphernalia sitting out in the deep freeze.

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True of mining campaigns, aggression is the rule as mineral-rich deposits require manhandling. While the Bureau of Land Management owns the site, The National Chloride Co. of America and Tetra Technologies Inc., which took over operations from Cargill Salt whom it purchased in 1998, are the current tenants holding placer claims.

Tetra, who operates on 11,000 acres at the northern end, focuses its energy mainly in the production of calcium chloride in liquor, flake and pellet form. Bristol Dry Lake is one of seven North American natural brine production locations managed by the company, which vaingloriously bills itself as the leading worldwide producer and marketer of calcium chloride. A credible statement, though, for at the Amboy plant alone Tetra Chemicals harvests roughly 150,000 pounds of material per year.

The National Chloride Co. of America, which began large-scale operations in 1950, works 24,000 acres of the lake at its southern end and only produces calcium chloride in liquid form. According to the foreman, who suspiciously eyed me from behind his opaque sunglasses, despite being stationed on the premises for more than five decades longer than his neighbor, his company insists on keeping a low profile. Indeed, the operation doesn't even have a website and remains the more mysterious of the lake's entrepreneurs.

Regardless of their self-inflation, or the scope of their forced-entry, both companies appoint a small platoon of workers on site—fewer than 10 each. Irrespective of the minimal personnel, the locale still exerts a forbidding atmosphere.

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"What the fuck are you doing way out here, man? Don't you realize how hot it is?" I imagine these to be the first sentences uttered by the foreman if I were caught roving his company's property. My fear of being discovered exploring the grounds is irrational. Considering the primary reason I abscond from the scene is because of its torridity; a brush with staff, while unlikely, in retrospect, seems inconsequential.

The real authority is the air and it demonstrates a command that trumps any apprehension I have of confronting mining personnel, or law enforcement. Each time I make it farther out I experience joy tangled with mounting dread as I'm caught between my desire to push onwards, but anxious at the thought I might be unable to retrace my way back in a progressively eerie environment.

The wind is a ventriloquist, giving shape to interstitial space and unleashing blasts one would imagine to be the kind emitted from an earthmover. During various episodes I've been badly spooked, as its delivery can be confused with that of a truck approaching from behind; and its presence can ignite the engines of ancient vehicles.

The most malefic trick it demonstrates is its ability, as it enters windows, to lift torn upholstery from inside pickups. Out of the corner of my eye it will look as if a hooded figure is furtively ducking below the steering wheel of an old jalopy.

Aside from junk left by decades of occupation, I know I have no company, but I'm nevertheless paranoid, convinced that there might be someone else out there, watching.

Far from the road, strangely apparent is how unaffected surfaces are to the unruly tempest above. Entrenched, what I usually experience is memorable, for it's a phenomenon I have scarcely encountered in my life: total stasis. The site is betwixt begotten archeological dig and frigid necropolis with excavations systematically arranged like those of graves in a conventional cemetery. Accompanied by subaerial parlor tricks, the haunted house's props sit motionless, and its bodies crystallize in silence—perhaps mourning the loss of their holy water. How a state of placidity embalmed with pathos co-exists under a hellish zephyr is part and parcel of the site's mystery.

When the wind ceases, one is incarcerated by silence. The abrupt nullity of ambient sound is horrifying, forcing one to experience the bedlam inside their own body. I hear year's worth of loud music accumulated in the form of screeching, and can feel the sound of internal fluid, rushing.

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Preparedness won't make you immune to the elements. When I bring water with me, it disappears; if I use cream sunblock, it runs into my eyes; if I use a spray sunscreen, a bullying breeze carries it away. My clothes shrink and split at the seams. Thick and sturdy footwear is a necessity; though every time I've ever marched into the complex, at some point the ground collapses and I'm left knee deep in lutaceous scum that quickly hardens.

Having plodged miles that feel begrudgingly rationed out, wearing boots bedraggled with mud; crippled by exhaustion and dehydrated; my cautious demeanor and familiarity with the region notwithstanding; I'll think to myself: Fuck this, I'm dead.

If I were to succumb, would my corpse eventually become encased in a shroud of halite? Who would find me and how long would that take with 15 to 20 men working a 70-square-mile plot? When someone did, would the funerary velation of my body by a mineral prevent identification? Like the aforementioned tire, would I become no more than another example of "human geology," a pseudomorphic mass of cubes in the shape of a pillar—what once was an animate figure who failed to heed orders from above?

Honestly, it's a novel end I would welcome over many others, but I'm fearful once I grasp the reality of how hot it is. The heat is an effective bodyguard that has hindered me from entering what increasingly feels like consecrated space.

The more I return, the more I've become aware that I am not welcome. I habitually underestimate the acrimonious climate and sooner or later realize it's a force I just cannot compete with—one that promotes a retreat back to the sanctity of a car. No matter the season, the triad of sun, wind and aridity never fails to punish a desert pilgrim. For as much as I drive myself in, I'm driven right out.

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